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"OVER-EQUIPPED AND UNDERTAUGHT"

Wm. Hawley Smith



HE city of Buffalo, N. Y., has a Chamber of Commerce, an organization which is common to most of the live municipalities of this country; and among the many affairs which this Association is interested in, and looks after, are the workings of the Public Schools in that thriving town. To further this work, they have an "Industrial Education and Vocational Guidance Bureau," whose special business it is to keep in touch with, and advise regarding these two important branches of modern educational work in the City of Buffalo.

Some months ago this Bureau, or Committee, appointed one of its members, Mr. Charles Rohlfs, to make a tour of inspection among the industrial schools of this country, see what he could see, and make a report to the Chamber of what he found out. Mr. Rohlfs did the work assigned him, visiting such schools in a number of States, East and West, and then made his report, which was duly published in the "*Buffalo Live Wire*," which is the official organ of the Chamber of Commerce aforesaid.

The whole report is "mighty interestin' readin'," as Horace Greeley used to say; but there was a group of three words in it which struck me as exceedingly pat and forceful, so much so that I have made them the title of this paper namely "Over-equipped and Under-taught"; and what I want to do is to bear down, something more than a little, on the suggestion which these words force upon the attention of all who read them, and who are really desirous of making our industrial schools tally up to the mark of their utmost possibilities in the line of efficiency.

The sentence in which these three words are used in the report is as follows: "A visit to the technical schools showed what was found to be characteristic of all vocational schools; that is, that they are generally over-equipped and under-taught."

I think the reason why these three words struck me so forcibly that they "stopped wi' me" was because they stated so briefly and so well what I had often observed but had never been able to tell as well as Mr. Rohlfs told it.

And since I first read these words, now several months ago, I have quoted them to a large number of teachers in industrial schools, and I have yet to find the first such teacher who has not agreed that what this gentleman says is practically true!

Which things being so, they are "some'at to think about?" Let's think about them together, for a bit, and see what comes of it.

I suppose the first reason why these things are as they are is because it is so much easier to equip a school than it is to teach its pupils well! For, as a whole, mankind is given to doing the easiest things first! The small end of a wedge of pie is always devoured before the crust is eaten! The case is common!

Then, again, humanity is, as a rule, quite apt to believe that appliances can do the work, whatever it may be, if only they are kept going and make a full showing, to the effect of "something doing" all the time. I don't want to over-state the case, or be unfair about it; but I am forced to the conclusion, after years of observation, that these characteristics are virtually true of a large per cent of men and women, as they go, in this world, and that some of these parties get into our schoolrooms, now and then. You may have observed that this is sometimes so.

And then it is so nice, and so handy to have all the tools, and the latest tools, to work with, whenever one has things to do. All these conditions are as natural as that water should run down hill, and in many respects they are not bad at all, in and of themselves. But they are bad if they result in a lowering of the feeling on the part of the teacher that he or she must be up and doing in the *teaching* part of this branch of educational work—if they generate in the teachers a tendency to substitute tools for teaching, and lead them into a mental condition which is, to a large degree, satisfied with whirling belts and the purr of lathes and the buzz of saws.

Another item on this count, and not a good one either, is the fact that much more of the people's money is spent in equipping such schools than is wise or right. As a matter of fact, more than one such school has been so crippled, at the very outset, by an extravagant equipment, that it has largely failed in doing what it was instituted for! And such an outcome is about as bad as it could be.

Then, again, because most manual training schools were first set up in cities, much of their equipment is "citizefied," if I may use that term, and is very far removed from the needs of country schools or small-town schools, whose purpose is the industrial education of their pupils.

This phase of the situation, of a city-equipped school for small town or country purposes, is most noticeable in

the kitchen outfits of industrial schools; and it is a fault which is specially in evidence in the schools of this sort whose business it is to train teachers for domestic economy teaching. Nearly all of these pedagogical schools are located in cities where the use of gas is not only obtainable, but is common; and the result is that all the kitchens in these schools are fitted up with gas cooking stoves, and these only, for all cooking purposes.

But the fact is, that only a very small per cent of the cooking that is done in the families in this country is done with gas! A vast majority of the kitchens in the United States are equipped with wood or coal stoves only. Add to this the fact that at least one-half of the success of cooking any dish depends on the fire that does the work, and that the condition of such fire is the chief factor in such success, and then think what it means to prepare teachers to teach the art of cooking by means of gas stoves only! The condition is almost beyond belief, and yet it is so common that I have never yet seen a school for the training of domestic science teachers where anything but gas stoves are used!

I once visited a Township High School which stood out in the open, far removed from all human habitation, and in a community where not a single family burned anything but wood or coal, and the kitchen of this school was "equipped" with a number of the latest design gas stoves, and an "individual gas plant" was installed for their running! When I asked the domestic economy teacher in this school (a city-reared and city-located Normal-School graduate) why these things were so, she replied that she had never cooked on anything but a gas stove, and that she knew nothing about building or managing a wood or coal fire anyhow. And then she, with a somewhat supercilious lift of her eyelids, added: "Besides, gas is so much easier to handle and so much cleaner!" *Sic!*

My feeling about all this is that that school was "over-equipped and undertaught," and that something ought to be done about the like, both in this particular school, and in all similar ones.

Indeed, I believe that a new order of things, in this particular branch of industrial educational work, ought to be inaugurated in *all* of these schools whose chief business it is to prepare teachers for domestic science teaching. This is specially true of Normal Schools and Colleges, nearly all of which now make a specialty of this kind of pedagogical work. I never saw a normal school or a college kitchen which had in it any means whatever for cooking except gas stoves. Maybe you have been more fortunate in this respect than I have. I hope you have. I only report my own experience in visiting scores and scores of this class of schools, located in many different states in this country.

My notion is that, since the great mass of the cooking done in this country has to be done on a coal or a wood stove, that *every* school kitchen should be equipped with such stove or stoves, and that a part, (and no small part either) of the teaching done in these kitchens should be in the shape of instruction as to how to build and manage a coal, or a wood fire. Of course, where

gas is available, gas stoves should also be used. But the coal or wood should be there, anyhow.

Besides this, pupils ought to be taught how to keep a kitchen stove in good running order. They ought to be taught how to clean out a stove, to know its construction, where soot and ashes are liable to accumulate to the extent that they would obstruct the draught and keep the oven from heating as it ought to. They ought to have such a knowledge of these things that if what is put into the oven is not "well baked on the bottom" they would know what the reason was, and be able to remedy the defect. I honestly believe that many a divorce suit would never have been brought into court if the woman party thereto had known enough about a stove to make it bake righteously! But if a young woman is only taught to cook on a gas stove, and then has to use a coal or wood stove when she gets a kitchen of her own, as the chances are many to one will be the case, the chances are many to one that the bread, and all else she bakes, will be "doughy on the bottom" before she has been in her kitchen a month, and for a long time thereafter. And that means woe!

You see, the making and the running of a coal or wood fire, on which so much of the success in cooking depends, cometh not by instinct nor by intuition; tho one might be led to think that it was figured that it would so arrive, so far as the cooking instruction given in most of our College and Normal School kitchens is concerned!

I can but feel that all this ought to be different, and that's why I'm saying so, right here and now. I don't want to find fault. I'd far rather praise than blame, and I'm not a scold. But I am sure that our school kitchens, take the country over, are "over-equipped" with gas stoves, and that they are under-taught, away undertaught, in the item of making and running a fire in a coal or wood stove. What do you think about it? What does your experience say to you about it?

What I have said about the cooking equipments of Industrial and Vocational schools applies with equal force to the outfits of some other departments of these same educational institutions. I am always impressed with the super-abundance of lathes in the mechanical departments of these schools. These are always specially in evidence in Normal Schools and in Colleges—that is, in the schools which make a business of preparing teachers for industrial school work. In one of these Normal Schools, the President of the institution said to me, with manifest pride, as we stood in the "lathe-room" of his school: "We have more lathes in proportion to our enrollment than any other school in this country." I wonder!

Per contra, the late Senator Stout, of Menomonie, Wisconsin, the Founder of the Stout Institute, when he succeeded in establishing a "County Normal School" as a branch of that institution, for the training of teachers for the small-town and country schools of the county, found very little use for "lathes" in this department of pedagogical work, and in their stead he installed a dozen or more "farmers' blacksmithing outfits" which the pros-

pactive teachers were taught to use with the best of results.

In the same way, in the dairy department of this school, while Mr. Stout was obliged to install a large butter-making plant in order that he might be able to get a regular supply of milk and cream; yet, for training teachers in the art of butter-making, he put in a number of "individual cream separators" and "hand churning," such as the farmers in the country would use, and the teachers were taught to use these to the best possible advantage!

I can but think that his plan was good, and I am sure it was a success. Nor can I help thinking that he set an example, in this way, that might be followed with profit by many similar schools in this country, not only in the matter of lathes and churning, but in many other of the "equipments" of these schools. Indeed, the whole issue and practice regarding the "equipment" of all these schools needs to be tintured largely by good common sense, and the special needs of each several school, rather than controlled by the popular idea of the "regular thing."

But all these items should be viewed more in sorrow than with blame. The fact is that this whole business of industrial education is all so new that no one knows just how to do the best thing about it, every time and always. And because it is all so new, it is specially difficult to find teachers who are masters of the situation in its present comparatively crude condition. I take it that this is really the chief reason why Mr. Rohlfs found these schools so much "undertaught."

My thought is, that he is a rare man who knows just what to do about all these things, and that is why we all ought to be sparing of blame in the premises. At the same time, we all ought to be doubly diligent in our efforts to remedy the situation, whenever it is not what it ought to be.

A few years ago, I visited a "Manual Training High" in one of our Western cities. The Superintendent of the city schools was my guide, and we spent nearly the whole day in the building. It was a model structure, and was well, if not over-equipped. But the teaching was under-done. At the close of the visit, the Superintendent said to me: "I have been a City-Superintendent for more than a quarter of a century, but I was never 'up against it', in the matter of getting good teaching done for my boys and girls, as I am in this Manual Training School. At first, I got for a Principal a graduate from a noted Normal School, which made a specialty of this department of educational work. He was a good fellow, and he worked hard, but he was no mechanic, and so, when it came to really doing things, he fell down. The result was that he soon lost the respect of his pupils, and when that happened, of course his usefulness was at an end. He had the theory of his work down pat; but he simply could not put it into practice with my boys and girls.

"The next year I got a bright young mechanic who lived here in the city, and put him at the head of the school. He could do good mechanical work, all right; but he knew nothing whatever of the art of teaching—

the pedagogical part of what needed to be done. The result was that the pupils very soon ran over him, and he had all sorts of trouble with them, so that his work was a failure.

"Now I have a good mechanic for a principal, one who worked at his trade for some years, and backed that up by a thoro course in manual training pedagogy, and I am beginning to get some results that approach my ideal of efficiency. But still," he went on to say, "the poor man is in hard lines, in a way, in that he finds it very difficult to get teachers who can really teach the things that must be taught to his pupils! I believe most of his teachers really try to teach what he asks them to, but I am forced to say that there are only a few of them who are doing the work assigned them as it ought to be done."

And, while I am at it, I don't think that I can do better than to quote this Superintendent still further, for he was a man of large experience, and of eminent good sense. As we were on the way back to his office, he said: "I wish that, somehow, Natural Selection and the Survival of the Fittest could get in this work in the schools that make a business of fitting Manual Training Teachers for teaching. The fact is, that there is a greater demand for such teachers, just now, than there is for any other class, and wages are better there than elsewhere. The result is that many prospective teachers are trying to fit themselves for this branch of pedagogical work because it is easier 'to get a position' and it pays better. But very many of these young aspirants have no native ability for this sort of teaching, and so a large percentage of them fail miserably!"

And then he said further! "My experience leads me to believe that it takes a very happy, not to say rare combination of qualities in an individual to make a good manual training teacher. In the first place, there must be a natural aptitude for the concrete work which must be done in these schools. And my belief is, that it is well if the prospective teacher has had a good deal of experience as an artisan along the lines he proposes to teach—anyhow, that he should know how to do things, should be able to do them well, in a way which will command the admiration of pupils, and that he should have a genuine love for the work and an enthusiasm in pursuing it.

"Then, with such a base, or foundation to start on, if the candidate will take a thoro course in the pedagogy of manual training, the chances are that he or she will make a first-class teacher in the special field each has chosen. But without native ability, supplemented by practical experience, and made efficient by special pedagogical training, I seriously doubt if a really good teacher for this sort of work can be made.

"Anyhow," he added, "I have a few such teachers in my Manual Training High, and they are a balm to my soul. For the rest—well, they make me tired." Having said which, he went to his office, and I to my hotel.

But the more I think about it, the surer I am that this man was practically correct in his conclusions, and my belief is that one of the chief reasons why Mr. Rohlfs found so much of the "undertaught" in the schools he

visited was because too large a per cent of the teachers were of the kind who lacked the essential abilities and qualifications which the Superintendent outlined as we walked along together.

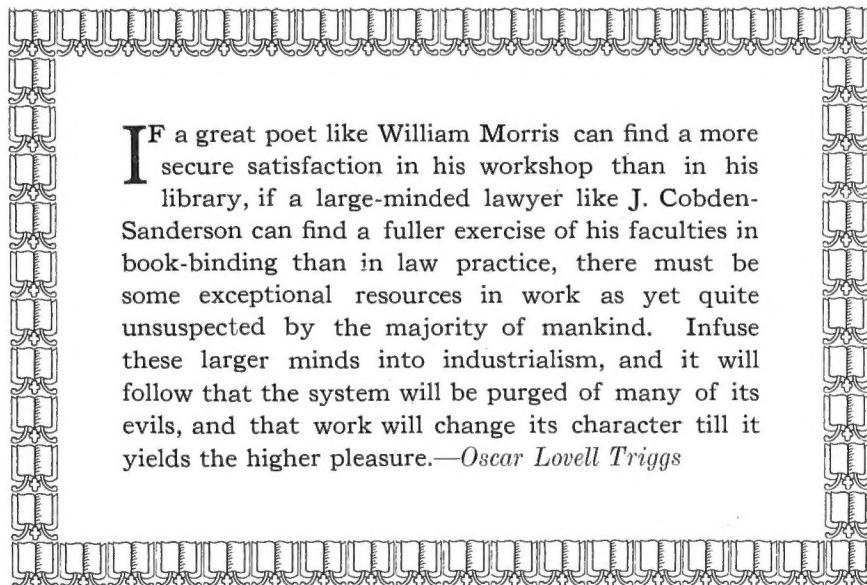
But the situation is not the worst, even as Mr. Rohlfs found it and reported it. "Faithful are the wounds of a friend," it is written, and the gentleman who made this report is a friend of the schools he set out to see, and a believer in the work they are trying to do. What we all ought to do is to take off our hats to him, and thank him for seeing so clearly, and for telling so tersely and forcefully of the things he saw.

My suggestion is, in closing this paper, that every teacher of industrial work who reads the three words which Mr. Rohlfs put together, and which I have set at the head of this article, should test out his school and his work on the basis of this "over-equipped and under-taught" idea. The words are a righteous challenge set up at the door of every industrial school in this country, and they have a right to be honestly answered by all

those who stand within these institutional gates, and who are justly responsible for what is done within their precincts.

How I wish that every such school in this broad land of ours could stand the test, and could truthfully say, "Our schools are well equipped, for the most part; but whether they are so or not, they are *taught* to the limits of efficiency along the lines of the work they are set to accomplish. Speed the day when this may be!

And so let us not be discouraged! We will get these things right, one of these days. Give us time! I have faith to believe that, sometime, we shall equip our industrial training schools with *the things needful*, and no more, cook stoves and other things that common, everyday people use every day—have to use every day—and that we will raise up teachers who will teach the common people how to use, with the utmost efficiency, all the tools and appliances that they need in their several callings, in the everyday affairs of their several lines.



IF a great poet like William Morris can find a more secure satisfaction in his workshop than in his library, if a large-minded lawyer like J. Cobden-Sanderson can find a fuller exercise of his faculties in book-binding than in law practice, there must be some exceptional resources in work as yet quite unsuspected by the majority of mankind. Infuse these larger minds into industrialism, and it will follow that the system will be purged of many of its evils, and that work will change its character till it yields the higher pleasure.—*Oscar Lovell Triggs*

DESIGN APPLIED TO THE PRINTED PAGE

Martha Feller King, New York, N. Y.

THE suggestions given in this paper have been assembled from various sources in the commercial field as a help to the teacher who is attempting to teach the principles of design applied to book covers and title pages. We need to demonstrate that the laws of design applying to other forms of art, apply also to the composition of the printed page.

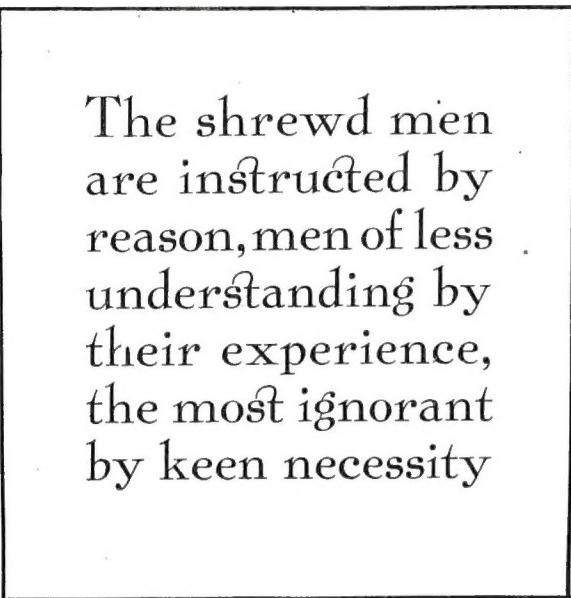


Plate A.

Boys and girls are fond of "decoration," if we dare distort the term to include fancy curves and meaningless embellishments. The teacher's problem is to direct this zeal and creative tendency along more sane and orderly channels. The most fruitful means of helping pupils attain a standard in their ideal of beauty is thru the contemplation of the truly excellent. A schoolroom

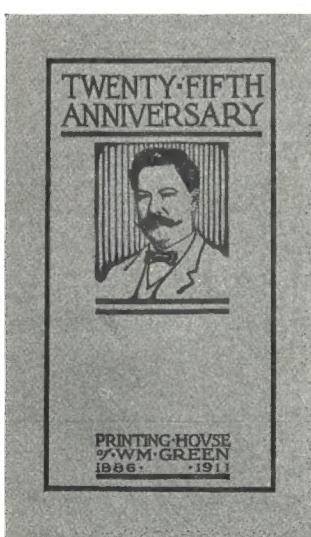


Plate B.

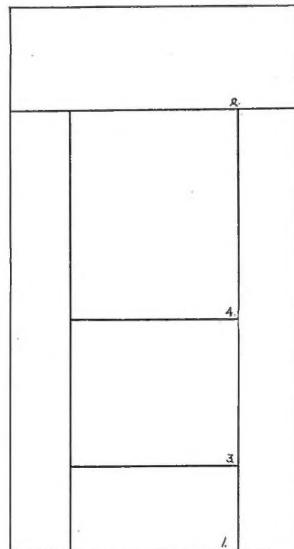
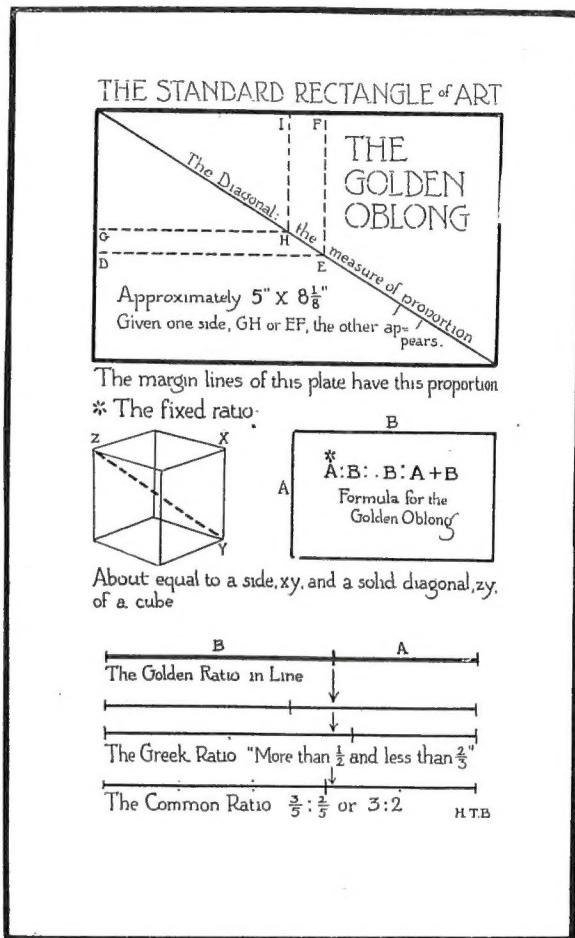


Fig. 1. Plate B.

exhibit* of well chosen book covers and title pages will give us standards from which to work. Then let the pupils sift these examples, one by one, until they can decide which ones they consider most attractive, and analyze and give reasons for their choice. By exercising such judgment as they already possess, they will do much toward furthering their own development.



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Plate A 1.

The Golden Oblong, a measure of proportion worked out by
Mr. Henry Turner Bailey.

Let us analyze some of the printed pages on exhibition. We find that certain limits qualify each page.

Facts Governing Composition of the Printed Page Derived From Analysis.

1. The dimensions of a page have much to do with its beauty. The more nearly the dimensions of a page approach a square, the less pleasing it becomes. When the dimensions approach the "Golden Oblong," the results are gratifying. Plates A and A¹.

* There are a number of sources upon which the teacher may draw for this material. Frank Alvah Parsons' book, "Advertising and Lettering" is excellent. F. J. Trezise's "Letters and Letter Construction" has proven practical in the industrial field. "Printing Art" is a magazine devoted to the study of the printed page and is rich in illustrative material. "The Printing Art Suggestion Book" is issued quarterly at ten cents a copy, and is composed of cover pages and well planned typographical material which is excellent for classroom purposes.

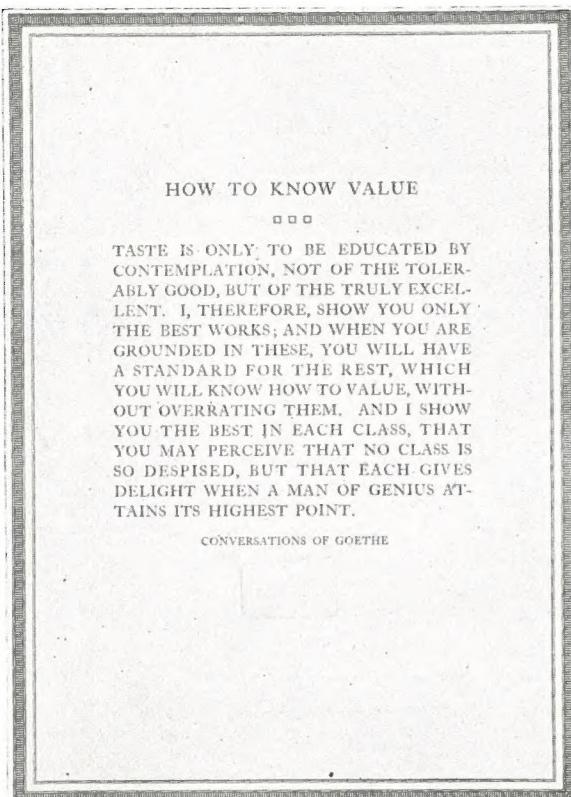


Plate B1.

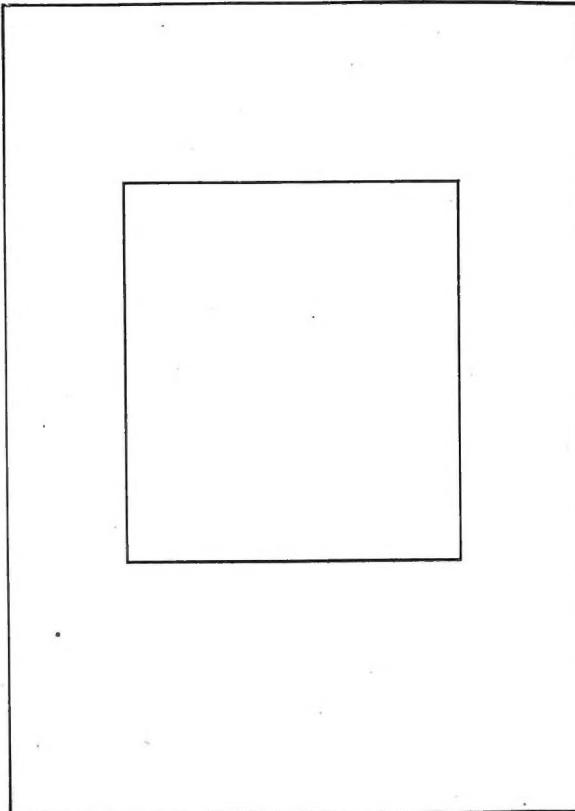


Fig. 1. Plate B1.

2. Equal side margins must be planned, except for those pages which in construction must allow for a binding margin.

3. The vertical center of a page is a point slightly above the geometric center of the page. Thru an optical illusion, the actual center of a page always seems to fall below the center. (Plates C and C¹.)

4. Symmetry is necessary to beauty, and is secured by a thoughtful consideration of the laws of proportion and balance. In the printed page, these laws are involved in the inter-relation of type masses, margins and borders. Plate B is consistent in the space relations of the type mass and the cut. Figure 1, Plate B shows by diagram the division of the page. Balance is secured by avoiding a combination of two or more spaces nearly or quite the same in shape and measure. Note the variety in the measure relations of panels 1, 2, 3 and 4. The side panels and strong border line give a vertical

movement which is structural in its relation to the page.

Plate B¹ shows one of the simplest arrangements of lettering planned within a pleasingly proportioned space. The border has variety of line, yet it is subordinate to the interest of the page. Figure 1, Plate B¹ shows the measure relation existing between the type mass and the margin.

5. Any decoration used, such as borders, or decora-

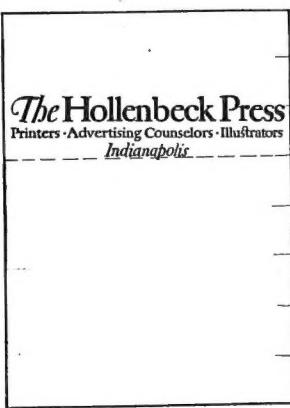
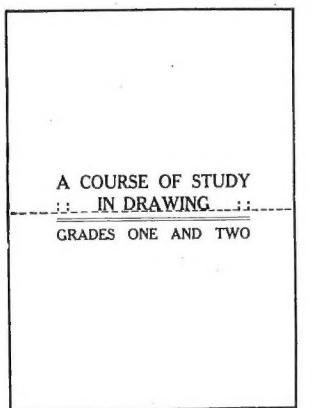


Plate C.

Plate C1.

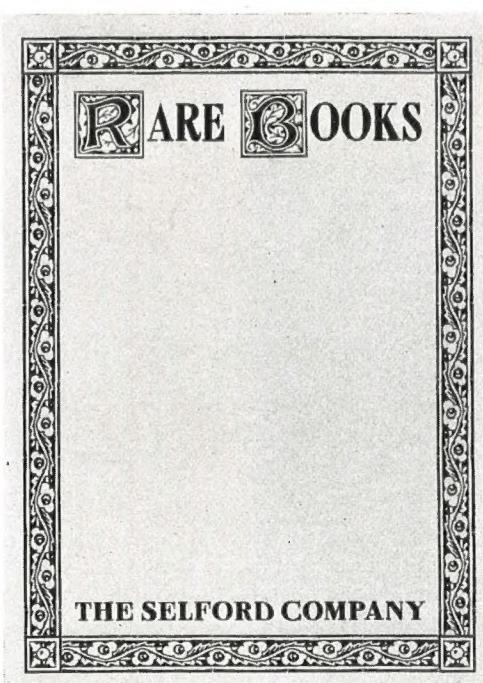


Plate D.

tive spots, should sustain the color effect of the type mass. A strong, bold style of lettering must be supported by a vigorous border, and delicate type must be consistently treated in the style of border used.

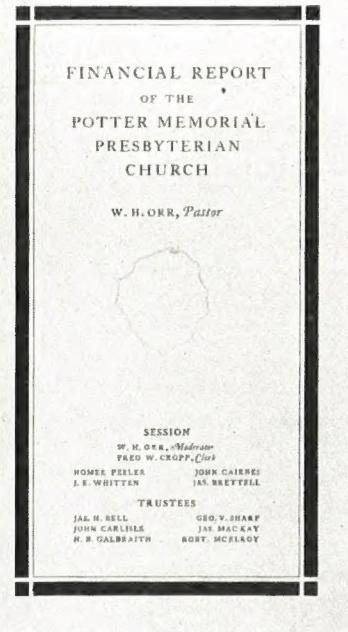


Plate E.

Plate D presents a harmonious relation of light-and-dark between the border and the lettering. In Plate E the measure of the border is so great that the lettering

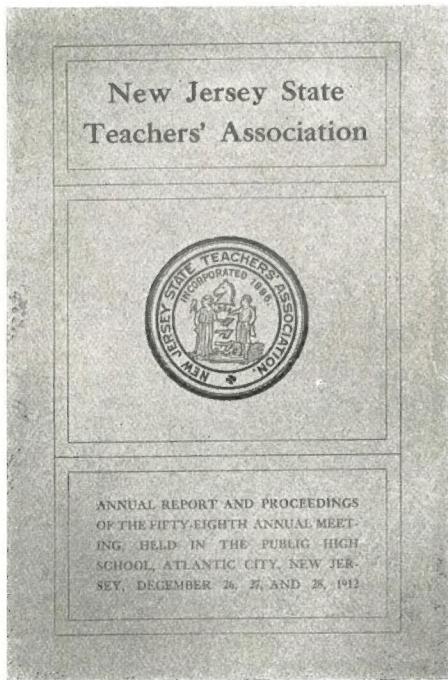


Plate F.

is subordinated. On the other hand, the border in Plate F is of such small measure that it fails to support the lettering, while the seal because of its size and color,

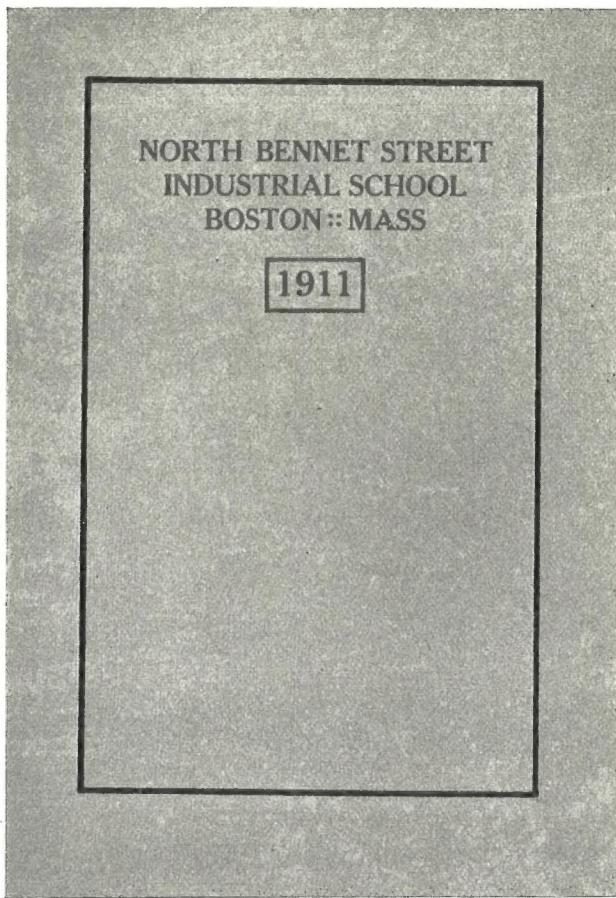


Plate G.

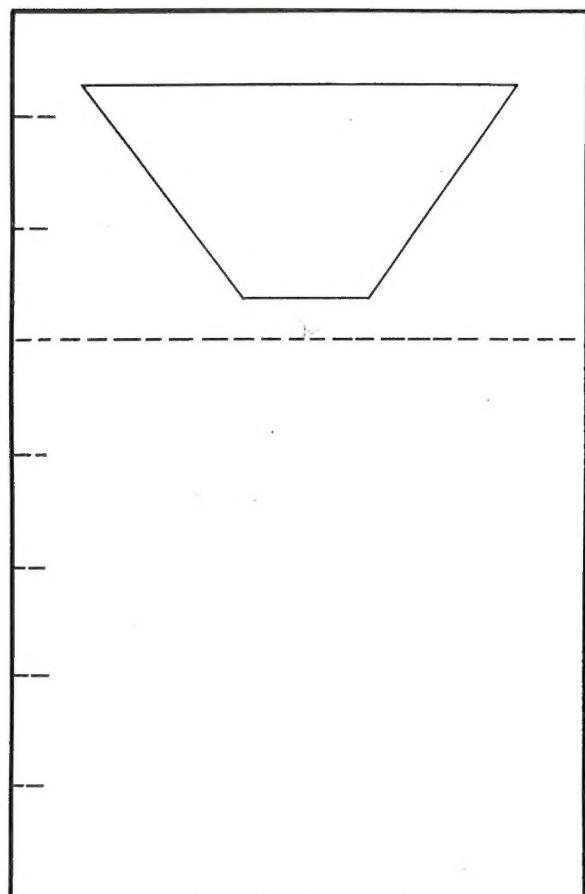


Fig. 1. Plate G.

CATALOGUE OF A LOAN EXHIBITION OF PAINTINGS BY OLD DUTCH MASTERS HELD AT THE METROPOLITAN MUSEUM OF ART IN CONNECTION WITH THE HUDSON-FULTON CELEBRATION SEPTEMBER-NOVEMBER MCMIX BY WILHELM R. VALENTINER CURATOR OF DECORATIVE ARTS

PUBLISHED BY THE METROPOLITAN MUSEUM OF ART NEW YORK MCMX

Plate G1.

destroys the balance of the page and becomes the predominating feature.

6. Lines of lettering should be so related as to

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THE CRAFTSMAN WORKSHOPS
EASTWOOD, N. Y.

Plate H.

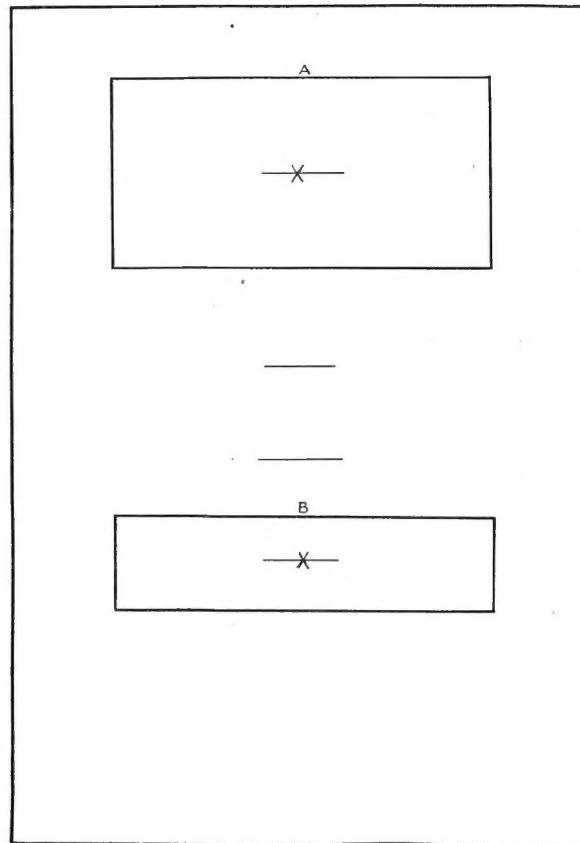


Fig. 1. Plate G1.

form masses of color when viewed from a distance. They lose force and character when scattered.

The beauty of a printed page composed of a single mass of lettering depends upon the balanced placing of that mass. It must be placed away from the center of the page to avoid monotony in measure relations, but not so far away as to destroy the unity of the page. The relation of 3 to 5 forms a basis upon which to work, as demonstrated in Plate G, Figure 1.

Our problem becomes more difficult when we attempt to balance a page consisting of a large and a small mass of lettering. In Plate G¹, Mass A is practically four times the area of mass B. We, therefore, locate mass A according to our 3 to 5 law, and use the axis from its center to its horizontal edge as our unit of measurement. Since mass B is one-fourth the area

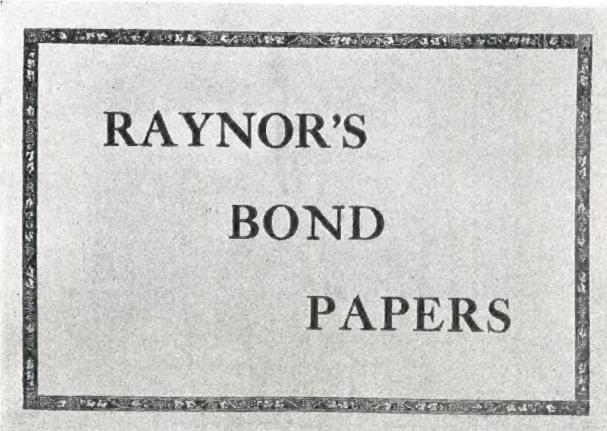


Plate K.

NARROW TYPES



Plate L.
In which vertical
lines predominate.

RESULTS

EXTENDED TYPES



Plate L.
In which horizontal lines predominate.

FLOWER

Plate L 1.
The type-face of this example is
not in proportion with the page.

of mass A, we will move it four times the distance away. Laying off our unit of measurement four times on the vertical axis of the page, we locate the center of mass B.†

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WEIGHTS and TINTS
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FROM JAPAN
Size, 18½ x 25½ Inches. Bolks
about 3 Inches to Ream of 500
Sheets. Code Word: *Diglyphe*



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••• IMPORTERS OF HIGH GRADE PAPERS •••
AT NO. 34 UNION SQUARE EAST NEW YORK CITY

An attractive and distinctive page showing good balance and a harmony between type face and decoration

Plate M.

† No rule or law governing beauty is arbitrary. If such were the case, products would be deadly in their monotony. It is well, however, to lean pretty heavily upon laws and rules until we formulate standards of our own, and deviations become in the strictest sense, forms of self-expression.

Plate N.

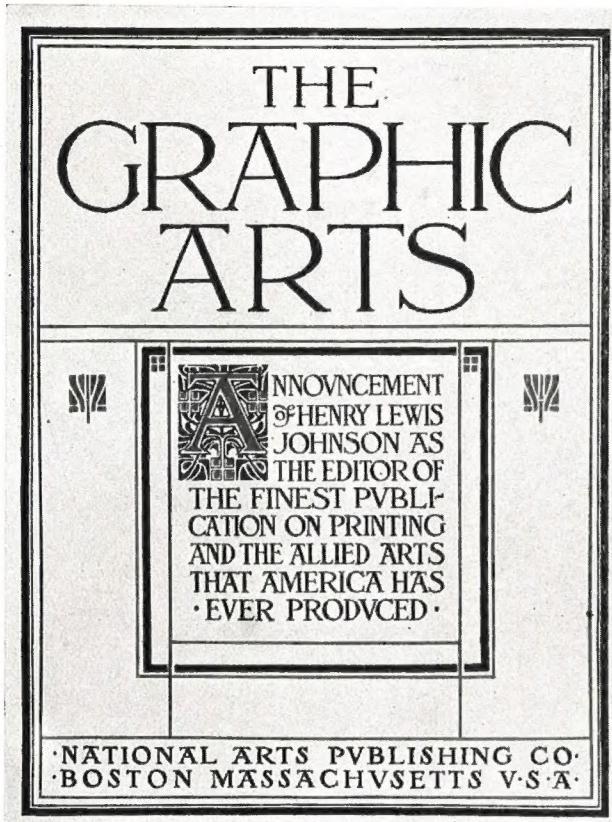


Plate O.

7. A line drawn vertically thru the center of a page, should divide the page into two parts of equal interest. In plate H the interest and weight of the page are centered on the left side of the page, and balance is destroyed.

8. A diagonal movement in the composition of a page always destroys balance. Plate K illustrates the disorderliness and lack of beauty in such an arrangement.

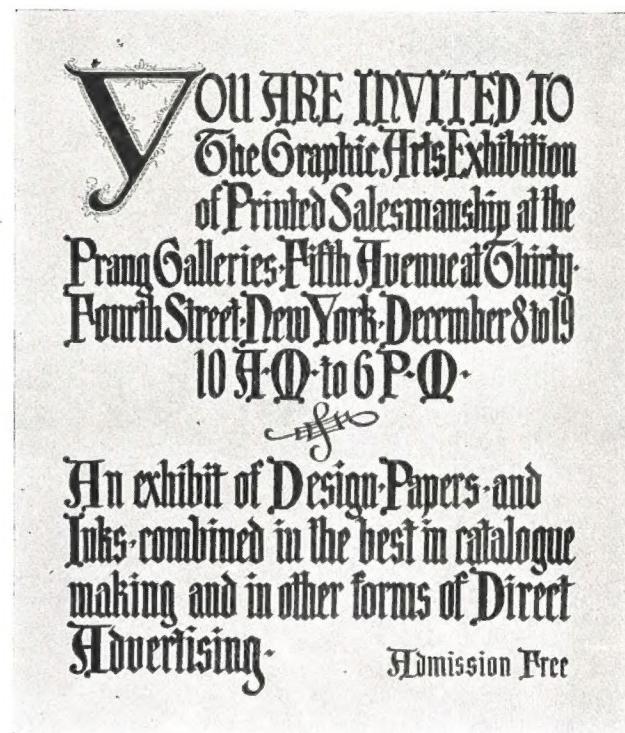


Plate P.

9. Letters or type must be structurally related to the page if harmony is to result. We cannot consistently use long narrow letters crowded within a narrow space, on a horizontal page. Plates L are examples taken from the American Printer which illustrate the resulting beauty of structural unity following the observation of this law.

Plates L¹ show the lack of structural unity following the violation of the law.

Plates M, N, O and P are examples of pages of exceptional beauty, upon which a page analysis lesson might well be based.

YEET observe, I do not mean to speak of the body and soul as separable. The man is made up of both: they are to be raised and glorified together, and all art is an expression of the one, by and through the other. All that I would insist upon is, the necessity of the whole man being in his work; the body must be in it.—John Ruskin

THE PLACE OF ART IN INDUSTRY

C. A. Prosser, Secretary, National Society for the Promotion of Industrial Education



HE cry of the last century, insofar as it had any cry with regard to art was art for art's sake. The growing need of the Twentieth Century—and the Twentieth Century is coming to have a changed view about art—is art for life's sake. There is a vast difference between those two points of view.

The faithful champions of high art in the Nineteenth Century who believed in "art for art's sake," protested against an age of materialism that constantly sought to commercialize art by luring it away from high standards to cater to low public taste. Art for art's sake was the Shibboleth of the fight to preserve high standards.

We are democratizing our civilization without democratizing our education. We are placing the best things in the fine arts which our cities possess, most of which we have imported from foreign lands, within the reach of the common man. There has dawned upon us the truth that art really can be a thing to enjoy, that it does minister to the life of the spirit, that it does prepare us to live well and to enjoy well the goods of life.

The Nineteenth Century thought and talked much about other worldliness and laid large emphasis upon the idea that the largest purpose of this life was the life to come. The Twentieth Century has come to a feeling that we need to make much of this worldliness. Along with Browning our age cries, "How good it is to live and learn." This is the first Heaven and we need to live it to the full. In proportion as we live it completely will we prepare ourselves for the life of another world.

So we are searching today for the things that will minister to the spirit. We are reaching out in every direction for the things that will make living richer and better. We are calling today for the things that will make people happier and more joyous and ultimately more spiritual. We have seized upon art as a weapon in our program which calls for "art for life's sake" and no longer "art for art's sake."

That does not at all mean a lowering of the old standards of taste and skill. It does not mean we will cease to protest against the materialism that would make our art slovenly and use it for low commercial purposes, much as we need to use it for high commercial purposes.

It means that we have laid the emphasis in art at another place. Art is to cease to be a wholly aesthetic thing and become a living thing. Art is to cease to be a mere tool for the purpose of polishing mind and soul and is to become a tool whereby we stimulate and enhance our need of life and desire of living.

If we are to measure art hereafter in terms of life, then we must have, on the one side, art for appreciation's sake, and on the other side art for production's sake.

When boys and girls in the schoolroom are taught to love the things that are right and good and true in

literature, they have been trained to correct tastes in the choice of reading—to the proper appreciation of literature. This is art for appreciation's sake. When out of their number, by encouragement and training, a few are developed who write good literature for others to read, we have an example of art for production's sake. Both are necessary in any conception of a well rounded life for the race. There is a very close analogy between art for appreciation's sake and art for production's sake on the one hand and between general education and vocational education on the other.

General education prepares us to be intelligent consumers of the goods of life—art, music, sculpture, literature, science—all the comforts which this wonder world has laid at our feet for our comfort and happiness. Vocational education prepares us to work well.

Both are necessary in the life of the individual worker and citizen. No matter how effective he may be as a producer, if he doesn't know how to consume intelligently and properly the goods of life, he is a failure as a citizen. Be he ever so intelligent a consumer, if he doesn't contribute in some way to the world's work, he is useless.

We stand in front of a great picture. If general education has done what it should do for us, that picture should satisfy some craving of our nature, should appeal to us with its story, should please us with its beauty and lift our spirits. We may know but very little about the technique of art, about fitness, unity, balance, harmony and rhythm, but we should as layman be able to enjoy and to profit by the work of the artist. Such power of appreciation is a heritage and birthright to which every American child is entitled.

But training in art so that we may appreciate the picture is a vastly different thing from the training in art of the man whose skilled hand wielded the brush that made the picture. All that we had to do was to let the picture tell its story as it was presented to us wholly made. But the artist must vision and idealize the story before it goes to the canvas. He must select the few things that he wants to stand out on the canvas to tell the great story to us and must reject all unnecessary and superfluous material. He must know how to treat the canvas, how to mix his oils so as to get certain effects, how to unite his colors so as to produce different shades and tints and how to apply the laws of perspective so as to give the appearance of light and shadow and distance.

Whether we are to be a people with rising standards of taste in the selection of commodities and comforts as well as high ideals in the fine arts is dependent upon the extent to which the American Public School system develops in the children that are coming up thru the schools a taste in art that will enable them to set better standards in material and workmanship. As a people we have been too busy building a nation out of the wilderness and mastering industrial and agricultural

processes to give much attention to the refinements of life. Our unlovely cities and dreary country places tell from our dwellings to our billboards the low standard of tastes which we have exacted from artist and from artisan.

In this land a hundred million people need to be trained to higher standards of appreciation in pictures that our artists may execute better ones; in literature, that our writers may write better stories; in buildings, that our architects may erect better buildings; in music, that our musicians may write and play better songs; in dress, that our tailors and dressmakers may design more attractive clothes. This education in taste will not be accomplished in a day for it must come as the slow, sure growth of public standards and opinion.

The schools must play a larger part in the development of better ideas and a more intelligent appreciation but not thru the conventional course in drawing upon which we have thus far relied to create in our children an aesthetic sense which will function in correct taste in every field. Artistic taste is a special not a general faculty and to be trained must be exercised in the field or work in which it is to be applied. Intelligent selection of good literature, for example, can be trained only by contact with good books; right standards in music only by contact with good music; and the choice and proper use of correct clothes only by contact with right standards of dress. One of the strongest arguments for household arts training for all girls is that it furnishes the best and probably the only opportunity to teach girls taste in dressing by giving them training in the proper selection and use of material.

Impressed by the crying need of a more artistic product from our shops and mills and factories, one is likely to run to the conclusion that our deliverance lies in developing the aesthetic sense and creative ability of all our boys and girls who go into the industries either as leaders or as productive workers. This may have been true a century ago when under the simple conditions of life the old artisan trades were followed by well-rounded workmen, each of whom had a chance to put his own individuality and his sense of proportion and beauty and adaptability into the things he made. Modern industry is not so organized. It is probably safe to say that today under the conditions which surround the workers of our day, few of them have a chance to exercise ingenuity and the aesthetic sense and individuality in the making of things save those who are employed as designers in the office of the concern making blueprints which the worker is required to follow carefully.

More than one out of every four persons employed in gainful occupations in this country are engaged in one way or another in the distributive callings of transportation, trade, clerical occupations, and public and professional service. While the ten million people employed in these lines need, as everyone needs, training in the appreciation of art, none of them can find the slightest use for any training in art for production's sake and such training is not a part of the preparation for the vocations which they follow.

More than 30,000,000 people are employed in the productive callings in agriculture, mining, domestic and personal service and manufacturing and mechanical pursuits. About 14,000,000 of these are employed in agriculture and a million in mining. In neither of these vocations does the productive worker find any use for training in art as a tool in trade. Thus far we have eliminated more than 25,000,000 workers as possibilities for vocational training in the appreciation of art.

The last United States census reports about 4,000,000 people employed in domestic and personal service. Of these about two and a half million make their living as barbers, bartenders, manicures, charwomen, cleaners, janitors and sextons, laborers and porters, laundry operatives, saloonkeepers and waiters. Their work certainly does not require any use of art or any important exercise of taste and imagination. There are more than a million and a half of servant girls in the group of gainful occupations to which one must add at least 2,000,000 housewives and housedughters—all of whom are engaged in the business of homemaking.

A wide field presents itself here for the exercise of simplicity, wholesomeness, sincerity and refinement, and a sense of order and beauty in the arrangement and conduct of the home. The woman in the home must be both a consumer and producer of pleasing and artistic things. She is a consumer in the sense she must choose intelligently the products that will best serve the life and the ideals of that home. Thus she is a producer in the sense she must take these materials and combine them efficiently and attractively. We have not begun as yet to realize upon the possibilities for better homes and richer as well as happier lives which lie in the training in the household arts, which will lift the taste and better the practice of our home-makers.

More than ten million persons of both sexes over ten years of age are engaged in productive industry. Three and a half million follow occupations, such as those of the baker, the fireman, the stationary engineer, and the laborer, where the very nature of the work is such as to make the use of art in production either of no consequence or impossible. Another group of about four million are engaged in some skilled and unskilled occupations where usually as operatives they tend machines, which with monotonous regularity turn out enormous quantities of articles all of the same pattern, over whose form and finish the worker has absolutely no control.

They need to be trained in the appreciation of art as intelligent consumers of it, because they every day consume it, but no amount of art from the producer's standpoint is going to benefit them in the work they are doing, because they are caught in the grip of the great god, machine.

Many of the most artistic things which come to our homes today are made by machines that have superseded the old hand crafts. The beautiful brass and copper bowls so much used today as fixtures for electric lights are made by being pressed with a rude lever against a revolving wooden disk until the metal takes the shape of the disk. The only judgment used was by the patternmaker who shaped the wooden disk against which

countless thousands of bowls are shaped. The figured textiles which have added so much charm to our home furnishings and to our dress are made by jacquard looms whose pattern is designed by an artist. From the pattern a card is easily made which controls automatically the work of the loom, leaving to the weaver the simpler task of keeping the threads straight and the loom working.

All these workers need to be trained to be intelligent consumers of goods because they must use them as individuals, but no amount of training in art from the producing side will benefit them in the work because they are caught in the grip of the great god, machine.

About three million people are employed in the so-called skilled trades where the worker is popularly supposed to have a chance to express his individuality and to exercise taste and discrimination to a greater or less extent in the selection and fashioning of material. These trades include such employment as those of the blacksmith, the carpenter and builder, the patternmaker, the machinist, the printer, the painter, the milliner and the dressmaker. Yet even here we know that the substitution of machine for hand labor and the organization of industry so as to secure larger scale production by division of labor has deprived the large majority of workers in most of the trades of any chance to make and execute his own designs and made him the more or less blind and unreasoning servant of the machine, and the omnipresent blueprint. The smithy is becoming a steam forge, the machinist a machine hand, the carpenter a member of a hammer and saw gang. Even the patternmaker, the cabinetmaker and the carpenter, trades where we might expect the greatest opportunity for individual initiative have become more and more dependent upon the designer and the draftsman. The tendency in every trade is not only to drive out the old handcraft with the machine but to so organize the business as to center control over the shape and appearance of the output in the office or drafting room and lay the emphasis in the shop upon uniformity and speed in production.

The old handcrafts which Germany is seeking thru industrial education so desperately to restore are rapidly disappearing in this country before the march of the all-conquering machine. While they should be encouraged because they are needed to set standards for us in production, they cannot be relied upon either for the employment of any considerable number of workers or to satisfy the demand for commodities even in the lines in which they formerly reigned supreme. It would be stretching the imagination to say that out of the 40,000,000 engaged in gainful occupations in the United States, a million have any opportunity of any consequence to put their own individuality into the things they produce and the end is not yet!

Our failure to recognize the true situation about art in industry has caused us in much current discussion to regard training in industrial art as a necessary part of the equipment of every wageearner and to lay the emphasis in much of our manual training and industrial and trade education in the wrong place. What is the solution of the problem?

If you say that I have painted a dark picture of modern industry—my answer is that the picture is a bright one. While modern industry has supplanted the old handcrafts and changed the demands on the worker it has increased a thousand-fold the productiveness of the country, put comforts and luxuries undreamed of within the reach of the purse of the common man, supplied the growing and diversified demands of a rising standard of living and broadened and deepened and enriched the life of all. We cannot, and would not, if we could, set back the hands of progress by a return to a more primitive industry. Our task is while holding on to all the benefits of this industrial age, to give it better standards in production so that it may make things that are more pleasing to the aesthetic sense as well as useful. In this way we will even make its products more useful since in the last analysis—"beauty is the right adaptation of things to their use."

Not long ago a very successful garmentmaker of New York declared that it would not pay in his business to break away from foreign models in dress, many of which he admitted to be ridiculous and hideous and to develop in this country an American taste and style, because the American people, having no standard of their own, were content to slavishly follow European models and conventionalities. What he said was all too true in many lines of production.

Our first large task then is to raise the aesthetic sense—the standards of taste in the selection and use of goods—of the American people. While other agencies too numerous to discuss must aid in the program, the foundations of it should be laid with the children in the public schools which can affect the standards in art and life of every American home and ultimately of every citizen and citizen to be. Thru proper art training in the schools we would also be able to discover the unusually talented child whose aptitude in taste and skill would otherwise remain buried.

We have had many so-called art courses in the public schools, many of which have had commendable features. Most of them have either been planned on the theory that art had nothing to do with living and standards of taste in pictures and statuary were the only desirable ends in the teaching of art; or that a course of drawing in pencil and crayon and water color has the power in some mysterious way to develop in children a general instinct or faculty called the aesthetic sense which will function properly, not only in pictures and statuary but in all the other kindred phenomena of life as well.

The doctrine of formal discipline has long since been exploded. There are no general faculties of the mind which, like compartments of the brain, can be trained for effective use wherever called upon. If we wish children, as the home-makers of the future, to have good taste in furniture, we must give the boys a chance to see and make good furniture and the girls a chance to see and to use it. If we want our girls and young women to have correct standards in dress we must show them correct clothing and hats and better still, give them a chance to apply correct principles in the making of simple garments. If they are after a while to so order

their homes that there is simplicity, sincerity and harmony in the selection and arrangement of wall paper, floor coverings, and furnishings, we must give them the chance many of them otherwise will never have, to see not only pictures but pleasing rooms thru model apartments as an actual representation of them. This calls for a wider conception of the meaning of training in art than most of the schools have yet held and requires the use of many methods and devices besides crayon and drawing paper, excellent as they are as a part of the training.

It is probably true that if we give the worker more refined tastes in his selection of pictures or carpets or furniture for *her* own home, we give *her* a greater interest and perhaps better standards in selecting and using material when she has the chance in her own work. But it is much truer that the worker who learns to make pleasing and beautiful things in her own work acquires the ability to exercise this aesthetic sense in her choice and use of the work of others. The best way to give our girls correct standards for home-buying is by courses in the schools where they are taught to make things that both comfort the body and please the eye.

How shall we get art into industry so that the output of our shops and factories may respond to a more intelligent demand for better goods? Wherever a craft or trade presents an opportunity for the worker to apply the artistic in the doing of the practical, to exercise the creative faculty, to use art as a tool in trade, training in applied art for his calling should be given him as a valuable and necessary part of his trade equipment.

The question of what training we shall give boys and girls for the industries is largely the question of the group we are dealing with and of where the emphasis should be laid. Undoubtedly those boys and girls who

have the artistic sense to such a degree that it represents the line along which they should be trained as their best way out to efficiency and happiness should be given the opportunity to develop it to the full and to be trained in its execution. Undoubtedly all children should have an opportunity while they are going thru the schools, whether they be the general schools giving general education or industrial or trade schools, to have their sense of appreciation of the things that are right and good and true and beautiful developed so that they may be intelligent consumers of the goods of life, so that they may learn to use aright the best things and to enjoy both their work and their leisure.

Training in the practical arts thru drawing, manual training, prevocational training and household arts training should uncover the latent interest and talent of the few who have real ability to do original and creative work in the designing and fashioning of material of one kind or another in industry. These have a precious asset which this country not only lacks but has taken particularly no steps to develop. The lack of any plan to train the tastes of our talented boys and girls is the thing which causes us to ship crude raw material such as wheat and iron ore to France in order to pay an annual bill of one hundred million dollars for the clothing models she sends us whose value lies in the initiative and the aesthetic touch which the French designers and workers have given them.

Not art as an end in life but art as the means to a better and richer life. An awakened and an intelligent taste for all as consumers—higher ideals and greater skill in their execution for every producer. These are goals beyond which the American people will find not only larger economic prosperity but industrial as well as social uplift and well-being.

THE architectural arts, therefore, if they are anything real, mean the addition to all necessary articles of use of a certain portion of beauty and interest, which the user desires to have and the maker to make.

William Morris.



Fig. 1. VENEERED FURNITURE MADE IN A SCHOOL SHOP.

The Use of Veneer in the Manual Training Shop

D. K. Hiett, Cincinnati

VENEER in the school shop is scarcely ever thought of by the average teacher owing to the general belief that its use is attended with too many difficulties and requires too expensive an equipment. The examples of work of grammar and high school boys shown herewith, should serve to demonstrate that the work is not too difficult and is productive of admirable results both for the teacher who has an eye to his annual exhibition as an end, and for the one who cannot put his favorite "tool processes" aside. For the first, it will hardly be necessary to state that the beautiful work he can turn out will attract the applause he desires, while the second will find endless delight in the problems of sawing, planing, jointing, etc., that present themselves in the building up of cores.

The disciplinary value of this work will not be doubted by anyone after a little experience. It is in-

conceivable that the ordinary boy will allow a piece of veneer to remain on a core after he has torn a sliver from an edge or corner by careless handling; and after he has had to remove several pieces of veneer for this reason he will learn to be careful without a word of caution from his teacher.

The value of this work was first brought to the attention of the writer several years ago, while working in a small eastern town where it was impossible to secure from the local mill, oak of the desired size and quality for high school furniture-making. We had some oak resawed to eighth inch in three and four-inch widths and used this in veneering cores built up of one-inch pine and chestnut. The morris chair and buffet, shown in Figure 1, have oak veneer applied in this way to the posts.

Figure 2 shows the method of placing veneer on two sides of a core at one time, pressure being secured with hand screws. Here it might be well to state that an adjustable hand screw should be used which will permit of sufficient pressure being applied at the edge, that there will be no doubt of perfect contact at this point. Figure 2 shows a piece veneered on four sides and finished, and another veneered and ready for the final trimming. Of course the delicate veneer may easily be torn from the core while in this condition and great care should be exercised while trimming to prevent this. The pieces shown in Figure 2, are veneered with an expensive figured walnut, and as one end is to show, a block of walnut is doweled as shown, to the end of the core before veneering.

Figure 3 shows the method used in veneering cores up to sixteen inches wide. The veneer is put on in two or three pieces. In doing such work one person should apply the glue (which should be quite thin) as rapidly

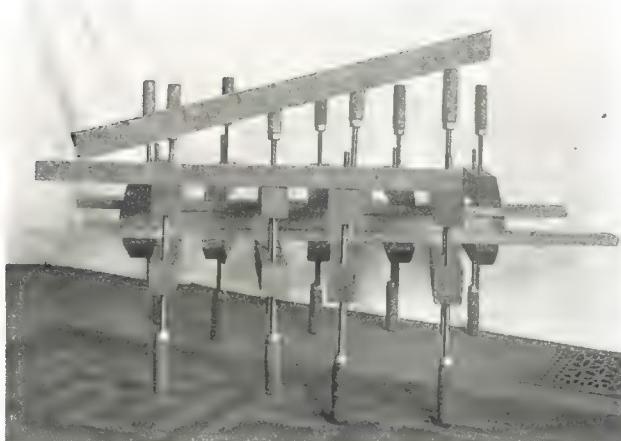


Fig. 2. A Core Veneered on Two Sides.

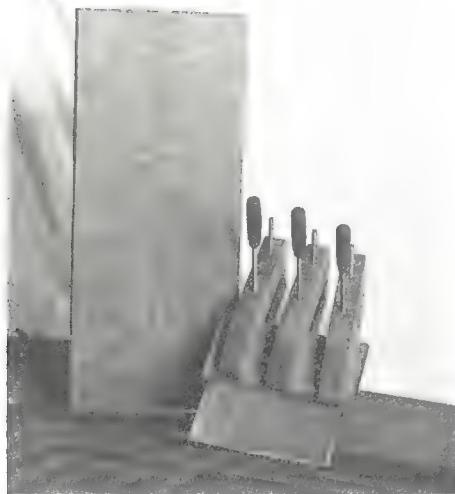


Fig. 3.

as possible while another soaks the top side of the veneer with boiling water. The veneer should be put in place and pressure applied as quickly as possible with a heavy board under the clamps. The corners of this board should be rounded slightly where it comes in contact with the veneer in order not to injure it. After the glue has thoroly dried, the edge of the veneer should be trimmed straight. This is best done by clamping a straight edge to the work and trimming with a knife. The edge of the second piece of veneer is easily straightened by clamping it between two boards in a vise and planing. When all is ready, this piece is glued on like the first, particular care being taken to get a close joint between the two. The large piece (Figure 3) is a piano bench top 16"x48", veneered with figured walnut, and gives some idea of what may be done along this line.

Figure 4 shows the method of veneering the edges of boards.

The three pieces shown in Figure 5, were built from

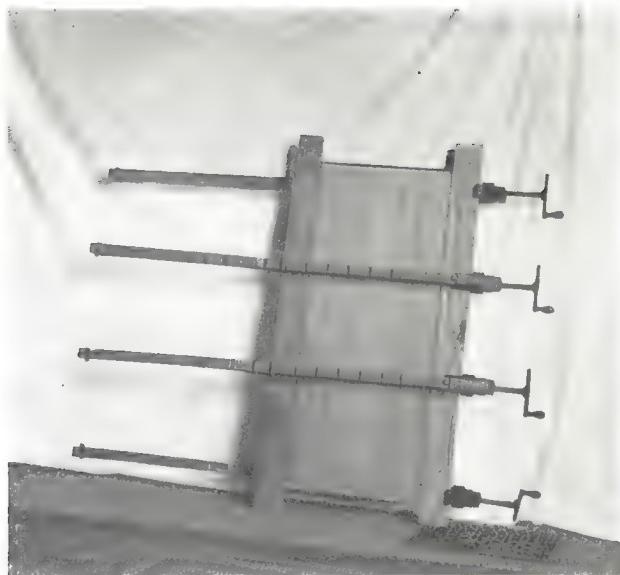


Fig. 4.

the case of an old rosewood piano which had done overtime in the schoolroom. It was necessary to veneer only the edges of the tops and the legs in getting out these pieces. The work was done by two seventh-grade boys 13 years old.

As an argument in favor of using veneer on such pieces as the buffet and morris chair shown in Figure 1, it may be said that the veneered post is far superior to the solid one, in that the knots and cracks so common in pieces of this size are done away with, and any desired uniformity or diversity in figuring may be obtained thru selection and matching of veneer. An example of matching veneer is shown in the back of the dining chair (Figure 1). By using similar pieces of succession slabs thru the flitch, it was possible to secure slats which are practically uniform in figure.

As to durability, the writer knows of furniture built up in this way which has done service for seven years; and tho protected by a finish of only filler and wax it is still in perfect condition.



Fig. 5. Built in a School Shop.

Experimental Work in the School Shop as a Means of Industrial Efficiency

Alanson H. Edgerton, Superintendent of Industrial Training, Canal Zone



ITHIN the last few years, much has been said and done to promote efficiency in our leading manufactories. Keen competition in industry has caused the producer to realize, more fully than ever before, that it is not only necessary to put a good product on the market, but he must also manufacture it with the least possible waste in time and material. To him, the elimination of a small amount of waste on a product often means a great economic gain.

Where boys leave the school workshops and choose similar work in the industries, the employers invariably tell us that, considering his experience, the boy is usually

tice, in most of our upper grade curricula, is limited to one and one-half hours of each week. Many of our industrial teachers believe that the boy should be made an intelligent, thoughtful worker, but when they find that the time allowed for this work is not sufficient, they excuse themselves and become satisfied to teach shop practice only. Others are trying to avoid making the boy a mere follower of directions, regardless of the time element. But if either of these teachers is to gain the highest degree of efficiency under our present system of education more successful experiments must be contributed along the lines of economy of time and economy in method.

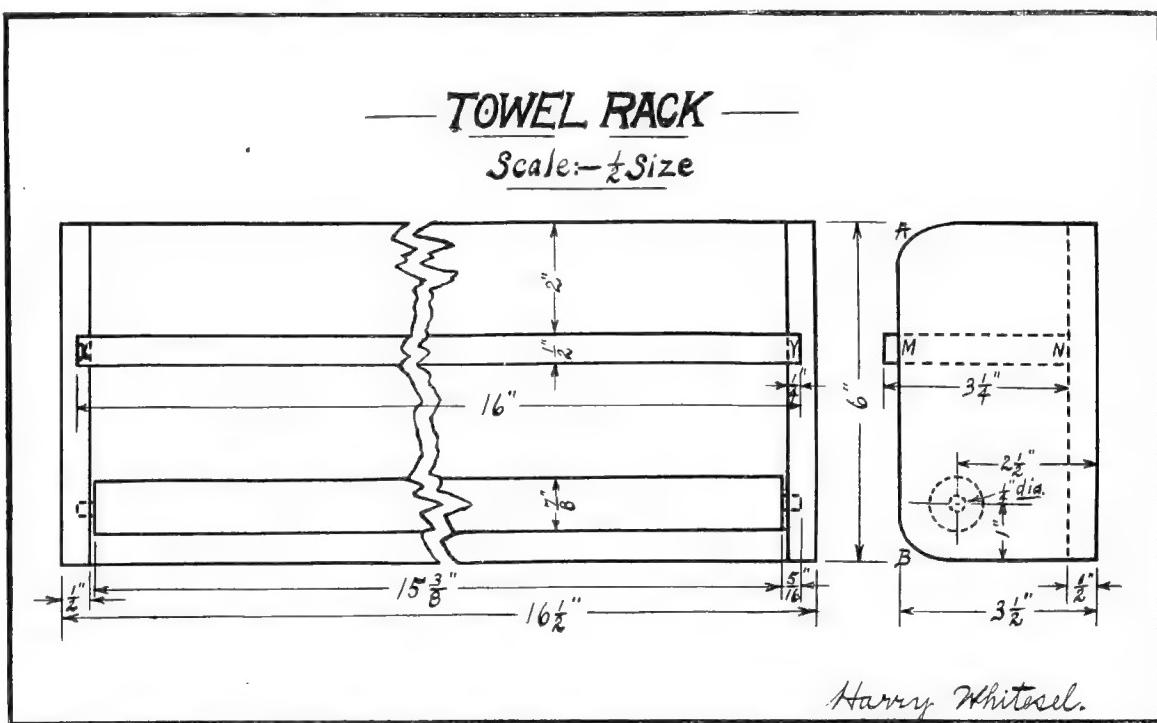


Fig. 1. Working Drawing of Towel Rack, Including Shelf for Supplies.

prepared to do a good piece of work; but, on the other hand, he does not appreciate that unnecessary slowness and excessive waste in his work are considered as losing factors in the business. This well known fact should suggest that teachers of industrial work avoid misrepresenting conditions as they exist in the industries. It is not enough that the school workshops merely increase the difficulty of the work, so the boy may master the correct uses of tools, and the important principles and processes of construction. These are necessary, of course, but he must also be made to realize that in the industries, it is not only necessary to do a good piece of work, but it must be made in a short time and with little waste in material. Until we do give the boy a fair understanding of these factors, which are considered so important in productive industry, we are not helping him to work under actual industrial conditions.

The time allowed for information and shop prac-

Realizing that there was an unnecessary loss in time whenever new processes, such as block-planing and chiseling, were introduced in our woodworking classes, I began experimenting with the hope of finding some way by which we might get more satisfactory results from the very beginning. Previous to this time we had always demonstrated in the usual way, explaining and actually making the piece of work before the class. Correctness in the use of tools was thus given proper emphasis, and the difficulties which would result from their incorrect usage were also explained. This method had little effect and seemingly resulted in the boys trying out my caution to see if the undesirable would happen. We, therefore, felt the need of a method which would help the boys in using their limited time to a better advantage.

Judging from these results, it seemed that the greatest weakness in our manner of demonstrating was due to the fact that the piece was made before the class,

giving them a vivid image of the results when the tools were properly used, but, on the other hand, merely words had been used to explain the difficulties arising from their incorrect usage. It was quite evident that a vivid mental picture of these difficulties was lacking, as some of the processes were proving to be stumbling blocks for a large part of the beginners.

An opportunity was offered to try out these inferences upon boys who were beginning woodwork in the seventh grade. A few days before school opened in the fall, the need in our schools for sixteen towel racks was brought to my attention. When the boys came to the shop for their first lesson, we measured one of the towels and decided just how long the racks should be, the other dimensions that would make the rack well proportioned, and the best method of construction for us to use. At the close of the lesson each boy had made a working drawing, including all of the necessary dimensions, as shown in Fig. I. During the next shop period, each of the sixteen members of the class took his material from the lumber rack, marked out his work, and sawed out the pieces for the ends, back, and the shelf. They were then ready to plane these, but before beginning we reviewed the correct uses of the smooth-plane, using scrap pieces of wood to ascertain whether or not they had forgotten the little experience they had with this plane in the previous grade.

The next time the boys reported, they finished planing the sides and edges, and sawed apart the ends which had been left in one piece for convenience in planing. Before starting them in the use of the block-plane, I divided the class into two groups, each group being composed of boys of equal ability, as nearly as I could judge from the work they had done in the sixth grade. To the eight boys in the first group, I demonstrated the process of block-planing in the usual way, showing them the correct use of the block-plane and explaining that if they

were demonstrated to them, did more accurate block-planing than the other group. Five of the eight boys in the first group had split one or more of their pieces in planing them, while only one of the second group had split one piece. As a result, the second group occupied much less time in squaring their pieces. With the help of an older student, I was able to keep an account of the time which each spent upon his four pieces. The eight boys in the first group took 672 minutes to block-plane both ends of their respective pieces, while the other group finished theirs in 504 minutes. This made an average difference of 21 minutes for each boy.

As this same piece of work would involve the introduction of chiseling, we decided to carry the experiment still further with this process. The chiseling was of two kinds: Rounding off the front corners of the ends at A and B, and making grooves on the inside of each end for the shelf to fit into at X and Y. The boys were grouped as before, but this time the second group was shown the correct method of chiseling, as illustrated in Fig. II-A; while the first group also observed the extreme effects, resulting from their improper use. In demonstrating their incorrect usage to the second group, I used the chisel against the grain, as shown in Fig. II-B, splitting the piece badly after having finished one corner. Demonstrations similar to these were also given for the making of the grooves.

The results of this experiment were much the same as those of the first one, excepting that the difference between the groups was naturally not so great, as neither of these chiseling operations was as difficult to master as the block-planing. Three of the eight boys in the second group had either split the corner as shown in Fig. II-B, or by chiseling straight thru for the groove; while none of the second group had split their pieces. This time the boys in the second group spent 976 minutes for both kinds of chiseling, as compared with 864 minutes used by the first group, making an average difference of 14 minutes for each boy.

These data on the results of either one of these experiments, are erroneous to a degree measured by the exact differences between the abilities of these two groups. However, this does not hamper the conclusions on the outcome of the whole experiment. The same groups were reversed for the second experiment, so that the boys who had the old method of demonstration during the first experiment were given the new method during the second experiment, and vice versa; therefore the results of the second experiment acted as a check for any differences which may have existed between the groups during the first experiment.

Because of the accuracy of these results, I conclude that the demonstrations of the incorrect uses of the tools gave the boy about as clear and permanent ideas as could have been realized by his own experience, thus saving him an unnecessary waste of time. The demonstration told him an undesirable story, clearly showing him what might happen to his piece under similar conditions. As a result, he was given a vivid mental picture which never left him while working on those operations. The boy who had the incorrect uses explained to him verbally,

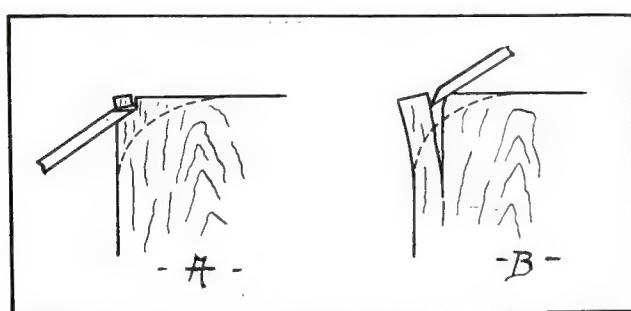


Fig. II. Correct and incorrect method of perpendicular chiseling, as demonstrated, are shown at A and B, respectively.

did not plane from either edge of the piece, as I had done, the grain would be split off on the other side. In demonstrating to the other eight, I not only showed them the proper way to use the block-plane but also used it to plane across the end in the improper manner, splitting and spoiling the piece which I had taken particular care to finish well. It was evident by the expressions on the boys' faces, that the latter part of this demonstration had had the desired effect.

In comparing the pieces of each group, it was very noticeable that the group of boys who had the undesir-

merely had general ideas aroused and consequently made no special effort to overcome those difficulties in his work. It was evident from the results of his work that there was a lack of that emphasis and vividness necessary to sufficiently impress him.

There is a tendency for teachers to depend too much

upon verbal explanations, because of the convenience of words and the immediate economy of time that results from their use. If words will give the desired clearness, use them by all means; but, if nothing more than an inadequate notion will result from such an explanation, the teacher has made a poor choice to get results.

INDUSTRIAL ARTS DESIGN

APPENDAGES AND THEIR APPLICATION

William H. Varnum, University of Wisconsin

(Fourth Article)

Rule 4.



SE of the Appendage. An appendage is a member added to the primary mass for utilitarian purposes. In the industrial arts, when an appendage is added merely for the sake of possible enrichment, it is as useless and functionless as the human appendix and, as a source of discord, should be removed.

An appendage, among other things, may be a plate rail, bracket, spout, cover or handle, all of which are capable of service either for or with the primary mass. In architecture it may be a wing or ell added to the mass of the building. Simple as its design may seem, it is often so placed in relation to the main or primary mass that it does not seem to "fit" or to be in unity with that mass.

Designing an Appendage.

Rule 4a. The appendage should be designed in unity with and proportionately related to the vertical or horizontal character of the primary mass but subordinated to it.

Rule 4b. The appendage should have the appearance of flowing smoothly and if possible tangentially from the primary mass.

Rule 4c. The appendage should echo or repeat some lines similar in character and direction to those of the primary mass.

All of the foregoing rules are intended to promote the sense of unity between the primary mass and its appendages. If a mirror on a dresser looks top heavy it is generally due to the fact that it has not been subordinated in size to the primary mass (4a). If the handle projects from the primary mass of an object similar to the handle on a pump, it has not been designed in accordance with rules 4b and c. Again, if the appendage projects from a primary mass like a tall chimney from a long flat building, it has violated rule 4a and has not been proportionately related to the character of the vertical or horizontal proportions of the primary mass.

It should be readily seen that if the primary mass has one dominant proportion while the appendage has another, there will be a serious clash and the final result is the neutralization of both motives, resulting in either an insipid and characterless design or a downright lack of unity.

Appendages in Wood. The design of the small dressing table, Figure 37, Plate 15, with the mirror classing as an appendage, is an excellent illustration of

rule 4a. The main mass of the table is vertical in character and the mirror carries out or repeats the character of the primary mass by having a similar but subordinate vertical mass. In this instance it is so large that it has nearly the effect of a second primary mass.

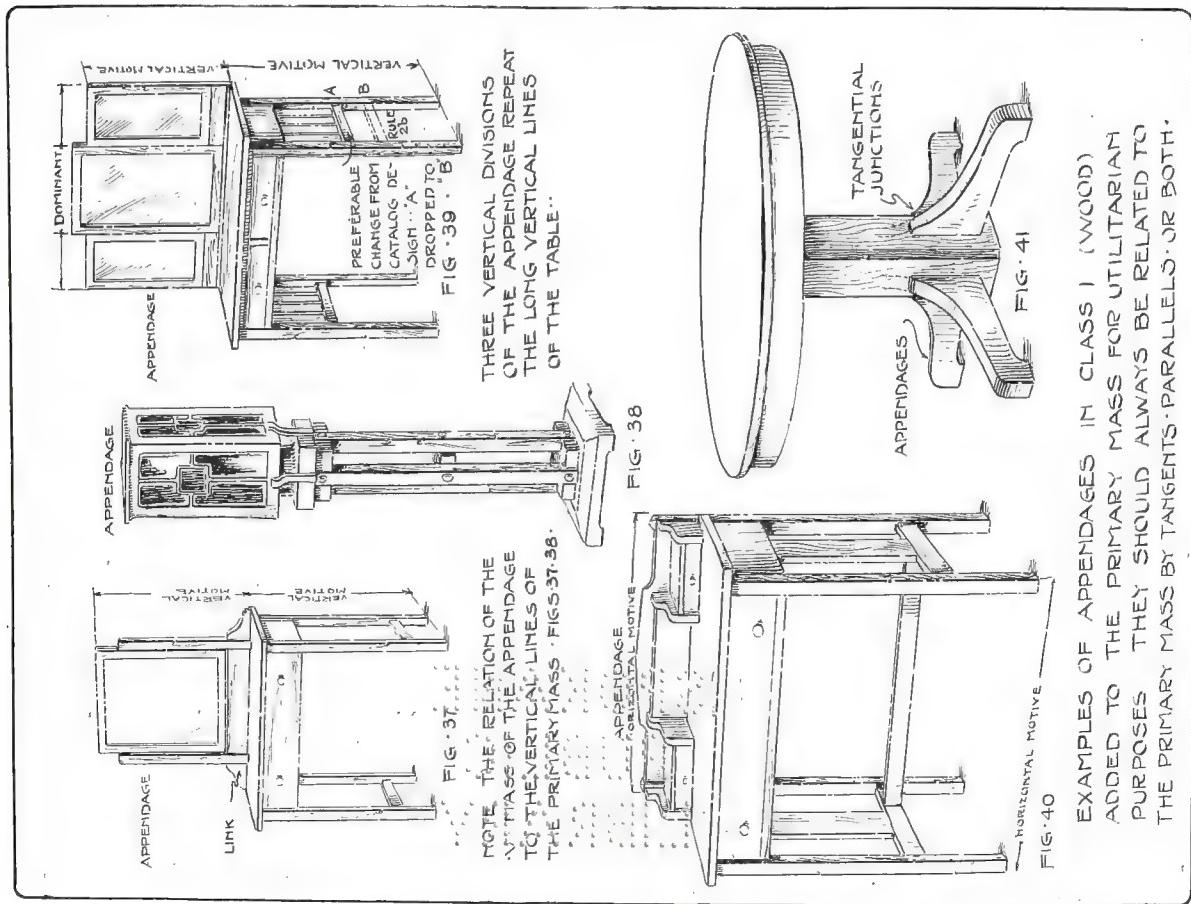
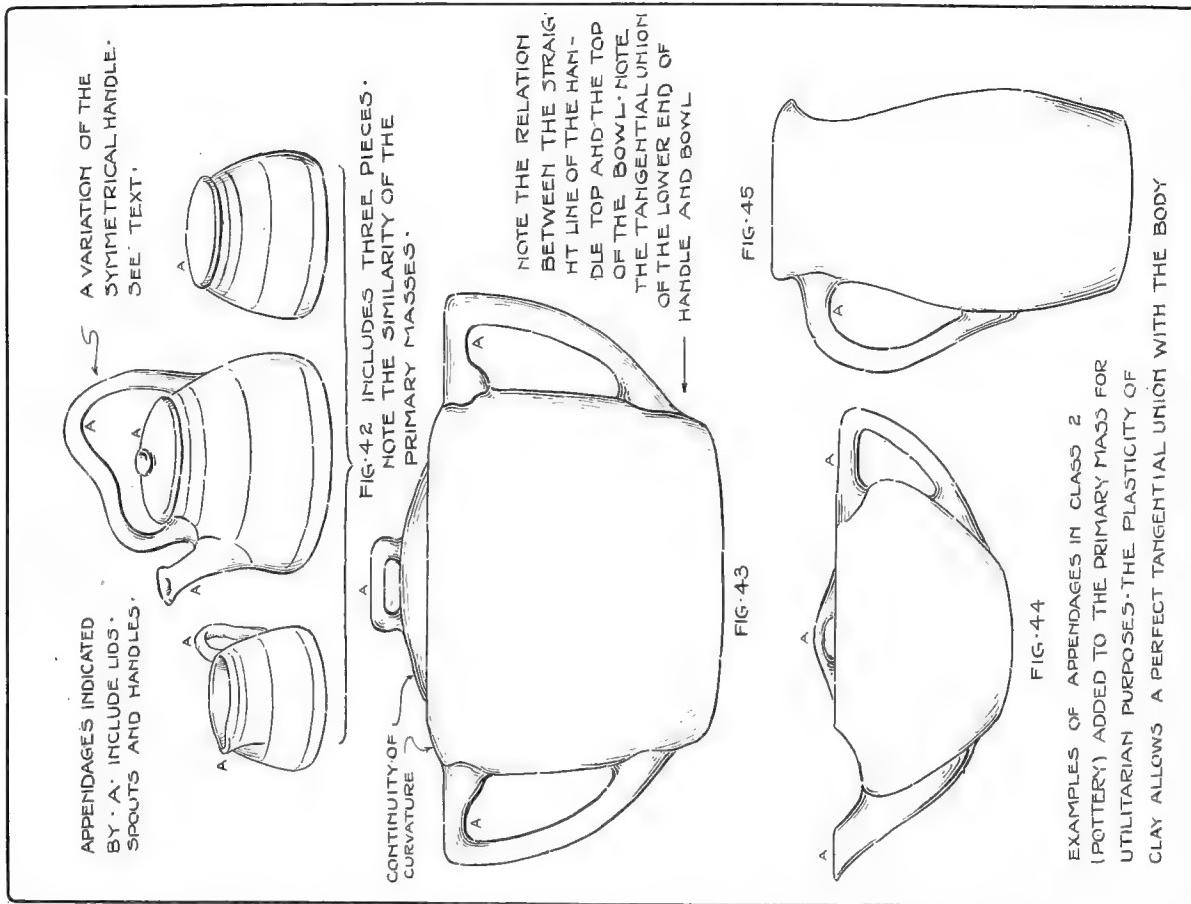
As tangential junctions are difficult to arrange in wood construction and particularly in furniture, the break between the table top and the mirror has been softened by the introduction of a bracket or connecting link. The curves of the link cause the eye to move freely from the primary mass to the appendage and thus there is a sense of oneness or unity between the two masses.

The lantern in Figure 38 becomes an appendage and is subordinated to the large pedestal or support. The tangential junction has in this case been fully possible and the eye moves freely from the vertical lines of the base to the similar vertical mass of the lantern without noticeable break.

The service of the dressing table, in Figure 39, with its three-division mirror makes the problem of adaptation of the appendage to the mass of the table in accordance with the rules, much more difficult. Under the circumstances, about the best that can be done, at the same time keeping within the limitations of desired service, is to plan the mirrors in accordance with rule 3b, with the dominant section in the center. To secure an approach to unity, each section of the mirror should echo the vertical proportion of the primary mass of the table.

The writing stand, in Figure 40, illustrates an excellent horizontal appendage repeating the horizontal character of the front or typical face of the primary mass of the table. The small drawers and divisions again take up and repeat the horizontal motive of the table, while the entire appendage may be subdivided under the three-division rule of 3b, with the dominance in the center portion. The short curves in the appendage all tend to lead the eye in a satisfactory and smooth transition from one mass to the other or from the table top to the appendage. The proportions of the small drawers are similar to the proportions of the table drawers (4c). All of these points of similarity bring the masses into close unity or oneness of appearance.

The table legs, in Figure 41, are more difficult to adjust satisfactorily. The idea of the designer is, however, apparent. The legs leave the column of the table with a tangential curve and sweeping out with a strong curve, repeat the horizontal line of the table top in the horizontal line of their bottom surfaces.



EXAMPLES OF APPENDAGES IN CLASS 2
(POTTERY) ADDED TO THE PRIMARY MASS FOR
UTILITARIAN PURPOSES - THE PLASTICITY OF
CLAY ALLOWS A PERFECT TANGENTIAL UNION WITH THE BODY

Figure 41a, a modification of Figure 39, shows close unity between the three divisions of the mirror due to the pleasing curve of the center section with its tendency to bind the other sections to it. Again, the echoing of the spacings of the three drawers in the similar spacings of the three mirrors, makes the bond of unity still closer to the ideal arrangement (4c).

Figures 41b and c are, in a way, parallel to Figure 41. The eye moves freely from the feet (appendages) along the smooth and graceful curves to the tall shaft or column of the primary mass. The turned fillets introduced at the junction of the appendage and the primary mass, in Figure 41c, have a tendency to check this smooth passage making the arrangement in Figure 41b preferable. The hardware for the costumers is well chosen and in sympathy with the vertical proportions of the design.

Appendages in Clay. With the word "clay" all difficulties in the treatment of appendages vanish. It is by far the easiest medium for the adaptation of the appendage to the primary mass. Covers, handles and spouts are a few of the more prominent parts falling under this classification.

The first process of the designer is to create the primary rectangle, subdivide it into two horizontal subdivisions in accordance with rule 2a, and proceed to add the desired number of appendages. The appearance may be suggested from the following illustrations. In Figure 43 the cover is a continuation of the curve of the top of the bowl (4a); the tops of the handles are continuations of the horizontal line in the top contour of the bowl, while the lower portions of the handles seem to spring or grow from the lower part of the bowl with a tangential curve.

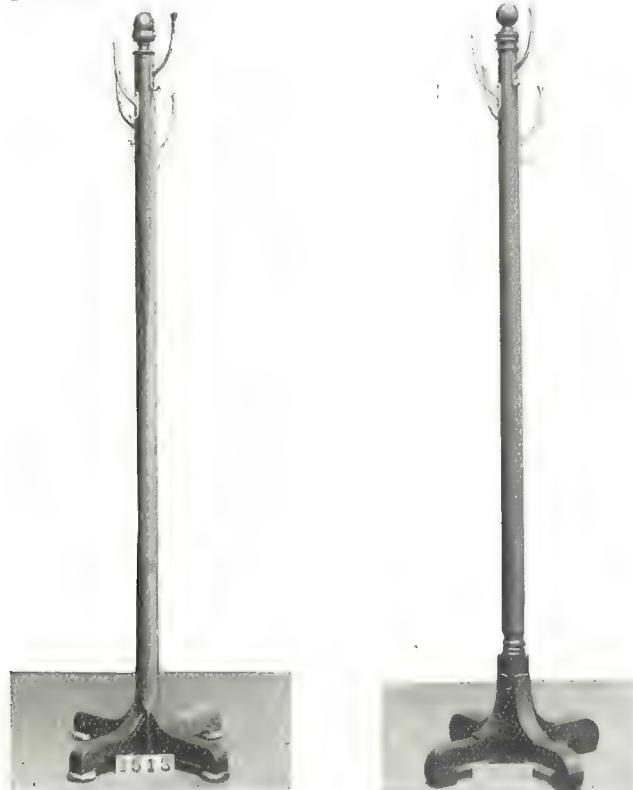


Fig. 41b.

Photos by permission, Berkey & Gay, Grand Rapids, Mich.

Fig. 41c.



Fig. 41a.
By permission, Berkey & Gay, Grand Rapids, Mich.

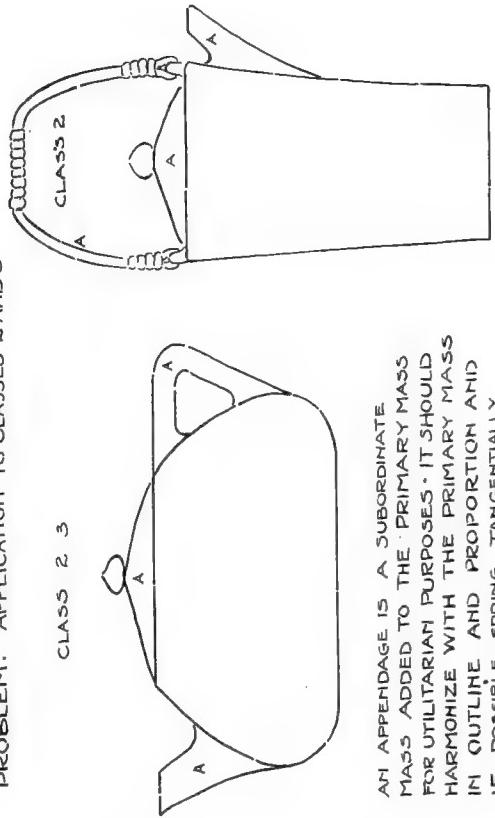
Figure 44 is a horizontal primary mass with the horizontal sub-division in the upper section of that mass. The spout and handle spring naturally from the body and balance each other in proportion, while the cover handles rise smoothly from the primary mass. The horizontal character of the primary mass is consistently carried out in the appendages.

The handle, in Figure 45, leaving the body at a tangent, rises with a long straight curve to turn suddenly and join the pitcher in harmony with its top. The apparent abruptness of the junction is softened by the rounding corners typical of clay construction.

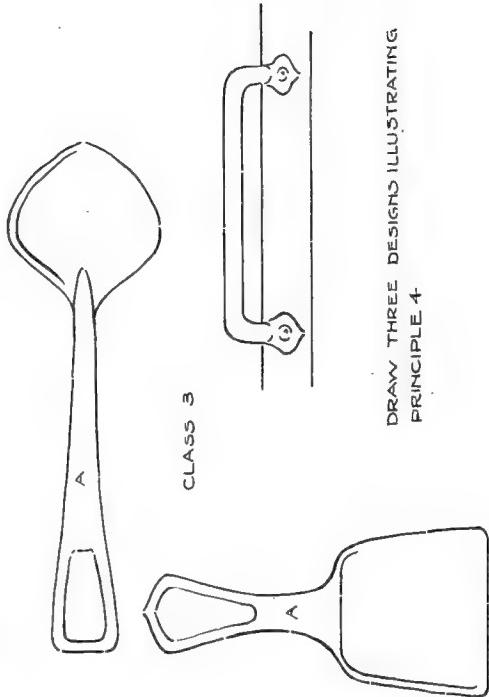
The Rookwood set, in Figure 42, represents three similar primary masses. The proportionate ratios and the horizontal sub-divisions are the same throughout. The handle for the tea pot has been curved in the center to give variety to the handle. This variation is a difficult thing to manage without consequent loss of unity as by this variation rule 4a is violated. One thing may be said in its favor. It brings the hand closer to the spout and thus supports the pouring weight. But the unusual is to be discouraged until sufficient skill in simple designing has been acquired.

In designing the appendages for clay, handles should be so placed that they readily control the weight of the material in the container and afford room for the fingers. Thus, it is better to have the larger portion of the handle opening at the top of the primary mass. The spout in all instances should continue sufficiently high to allow the container to be filled to its full capacity without danger of the contents running out of the spout. The glaze runs into rounding corners much more freely than into square, hence it is preferable to use rounding corners wherever possible.

APPLIED AND CONSTRUCTIVE DESIGN
PRINCIPLE 4. RELATION OF PRIMARY MASS TO APPENDAGES
PROBLEM: APPLICATION TO CLASSES 2 AND 3



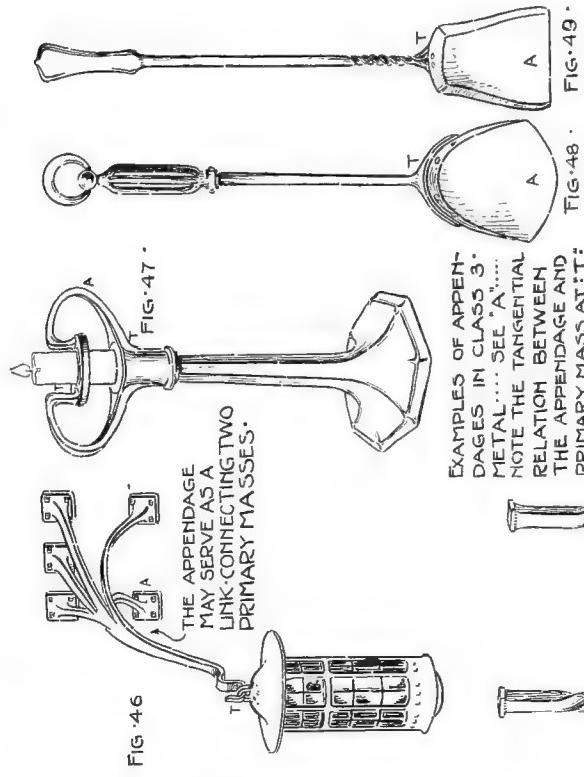
AN APPENDAGE IS A SUBORDINATE MASS ADDED TO THE PRIMARY MASS FOR UTILITARIAN PURPOSES. IT SHOULD HARMONIZE WITH THE PRIMARY MASS IN OUTLINE AND PROPORTION AND IF POSSIBLE SPRING TANGENTIALLY FROM IT.



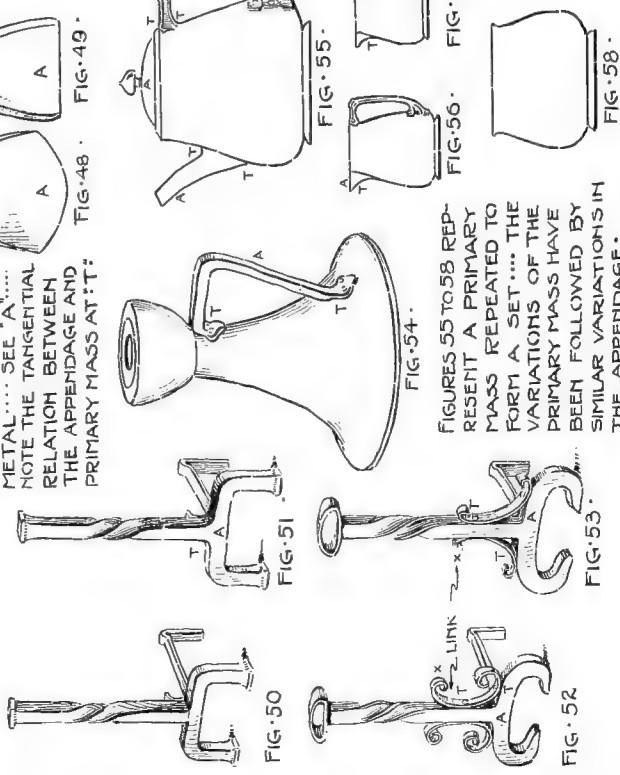
DRAW THREE DESIGNS ILLUSTRATING PRINCIPLE 4.

Plate 18.

FIG. 46.
 THE APPENDAGE
 MAY SERVE AS A
 LINK CONNECTING TWO
 PRIMARY MASSES.



EXAMPLES OF APPENDAGES IN CLASS 3.
 METAL... SEE 'A'....
 NOTE THE TANGENTIAL
 RELATION BETWEEN
 THE APPENDAGE AND
 PRIMARY MASS AT 'T'.



FIGURES 55 TO 58 REPRESENT A PRIMARY MASS REPEATED TO FORM A SET.... THE VARIATIONS OF THE PRIMARY MASS HAVE BEEN FOLLOWED BY SIMILAR VARIATIONS IN THE APPENDAGE.

Plate 17.

It is the unexpected curve that is welcome in all designing, provided it supports the structure. After completing a design involving appendages it should be checked from three points of view, (1) service, (2) unity between the primary mass and the appendages, (3) variety of curvature. On this last point it is needless to say that compass curves are not desirable except in rounding small corners or in using fillets, and it is well known that compass curves are difficult to assimilate into pleasing tangential effects. They are inclined to be monotonous and regular with a "made by the thousand" appearance to them. One should trust to freehand sweeps, drawn freely from the wrist and arm and springing naturally from the primary mass. Blackboard drawing is excellent practice for the muscles used in this type of designing. In a short time it will be found possible to produce the useful long, rather flat curve with its sudden turn (the curve of force) that will make the compass curve tame and commonplace by comparison.

Appendages in Metal. Figures 55, 56, 57 and 58 show the close bond between the appearance of the appendage in clay and in metal. While it is technically more difficult to adapt metal to the rules governing appendages than is the case with clay, the final results are, in most instances, equally pleasing to the eye.

In most of the figures showing examples in metal, the appendages have to be secured to the primary mass by screws, rivets or solder, whereas in clay they may be moulded *into* the primary mass. This tends to secure a more unified appearance; but in metal, the junction of the handle and the primary mass is often made a decorative feature of the design and gives added interest and variety to the project.

The simple primary mass, Figure 58, has a horizontal space division in the lower portion of the mass. This point of variation of the contour has been used in 55, 56, and 57 as the starting point of that dominant appendage, the handle. Springing tangentially from the body, it rises in a straight line of extreme value in service, then with a slight turn, it parallels and joins the top of the bowl, thus fulfilling the design functions of an appendage from both point of service and beauty. The spout and lid, Figure 55, may be likewise analyzed.

The points of tangency, in Figure 54, become a decorative feature of the design. The handles in the portions of the fire set, Figures 48 and 49, are different problems. It is difficult to analyze the latter figures to determine the appendages as they are in such thorough unity with the handles and are practically sub-divisions of the primary mass. But referring to the rule stating the fact that the appendages are subordinated to and attached to the primary mass, it may justly be stated that the shovel portion of the design may legitimately be classed as an appendage. This will explain the need of a curve at the junction points and the feature of the decorative twists in Figure 49. Both designs may be analyzed into three horizontal divisions.

The andirons, in Figures 50 and 53, illustrate interesting transitions in wrought iron from the primary mass to the appendage. The vertical shaft of wrought iron has been treated as a primary mass while the feet

may be classed as appendages. In Figure 50, we have an example of a frankly square junction point. Figure 51 discloses a weld with rounding corners, forming a more pleasing junction than the abrupt angle of Figure 50, and conforming to rule 4b. The appendage legs are echoing or repeating the vertical lines of the primary mass and there is consequently a sense of unity between them.

In Figure 52, the appendage foot has been curved, and the primary mass has a similar curve on the top of the vertical column to conform with rule 4c and to repeat the curve. The small links at X indicate an attempt to make the junction point more pleasing to the eye, but the link is too large to successfully accomplish the desired result. In Figure 53, the links have been materially reduced in size and in the amount of curvature. Now the eye goes unhampered from appendage to primary or back again, without perceptible interruption and the unity of the mass, seriously threatened in Figure 52, is restored in 53.

In Figure 46, there is an example of the manner in which this link may become large enough to be classed as an appendage connecting two primary masses, e. g., the lantern and the wall. Under these conditions, one end of the appendage harmonizes with the lantern and the other end with the wall. Figure 47 shows a cast brass candle-stick and is an excellent example from the "Studio" of tangential junction and similarity between appendage and primary mass.

Influence of Tools and Materials. Clay may readily stand as the most adaptable for appendages, with metal ranking second, and wood third. The grain of the wood seems to react against the tangential junction of the appendage and primary mass but readily responds to the requirement of similarity. Appendages are, however, quite necessary and it is merely a question of lessening the contrast of conflicting lines in an addition of this nature.

The band and bracket saws are required in many instances to form the connecting link between opposing masses of wood. Hand building or casting constructs the appendages in plastic materials. Appendages in cement are seen in the uprights for cement seats and are generally translated into the primary mass by means of mouldings or curves.

Forging or thin and raised metal construction affords many examples of the adaptability of material in constructing appendages. Rivets form decorative features at the junction points and should be placed with great care and relation to the decoration and the point of tangency.

Instruction Sheet. The typical views to be used in classroom work with the ordinary range of problems is shown on Plate 18. These typical views should be supplemented by dimensions, cross sections and other views whenever necessary. While wood construction has been omitted from this sheet, its development is quite similar to the steps indicated in articles 3 and 4.

The simple divisions of the structural form have now been covered in four articles. We are now ready for the elaboration of the basic form into new and interesting fields.



Fig. 1. The Corn Class and the Principal of the High School.



Fig. 2. The Prize Winner for the Best Ten Ears of Flint Corn.

A Live Problem for a Rural Community

Jennie M. Haver, Special Teacher of Drawing, Clinton, New Jersey



R. G. STANLEY HALL says, "The day of the mere professor, who deals in knowledge, is gone; and the day of the doer, who creates, has come. The brain and the hand, too long divorced and each weak and mean without the other, are henceforth to be one and inseparable; and this union will lift man to a higher level."

Hunterdon County, New Jersey, is primarily an agricultural community. Its public-spirited citizens and leading educators are beginning to realize that the ability to do something worth while is quite as essential as the ability to gain knowledge from books.

Early in the spring of 1914, the Hunterdon County Bank of Flemington, donated one hundred dollars in gold to be given in prizes for the best exhibits of corn raised by school children in the County and for the best essays of not more than five hundred words on the experiences of the pupils growing out of the contest.

The County Superintendent of Schools sent to each school, pamphlets on Elementary Agriculture, Government Bulletins on Corn Growing, and the general plan of the contest, which was as follows:

1. The contest will be restricted to the boys and girls enrolled in the public schools of Hunterdon County.
2. Each contestant must cultivate at least one-eighth of an acre.
3. The measurement of the ground must be verified by at least one disinterested person.

4. The choice of seed, testing, planting, fertilizing, cultivating, selecting corn for exhibition purposes, and all labor connected with the growing of the corn, except the heavy plowing, harrowing, etc., which necessitates the use of horses, must be done by the pupil who enters the contest.

5. A record of testing, planting, fertilizing, cultivating, progress of growth, and the maturing of the crop must be made by each contestant.

6. Samples for exhibition shall consist of ten-ear lots, one-ear lots, and three stalks.

7. The exhibit will be held some time during the month of October next, in the Court House, when the cash prizes will be awarded.

A number of boys throughout the County, including eight boys from Clinton High School, entered the contest.

Early in the spring the eight high school boys formed a Corn Class and met with their principal one period a week to study the corn pamphlets, to discuss topics and to try experiments related to the testing, planting, and growing of corn.

Each boy made a sand tray for testing the germination of seed corn and with this tested five kernels from each ear he had selected for seed.

The boys planted and cared for their corn during the Spring and Summer, according to the most approved methods set forth in their class discussions. This work had its joys as well as its disappointments. One boy's



Fig. 3. Snap shot taken by one of the boys to show the size of an eighth of an acre of corn.



Fig. 4. Picture taken July fifth, when corn in this section is usually knee-high.

corn was riddled by hail during a July storm and no stalks could be used for the exhibit. Another boy had his best ear of corn eaten by a crow. A crow's picture appeared in his essay labeled, "The black rascal that ate my big ear of corn."

The essays were written during the first two weeks in October. It was interesting to note that it was not the best English student but the best corn grower, who received the prize for the best essay. He was so filled up, so overflowing, with first-hand knowledge about corn, that he just had to express himself in clear, concise English.

The essays were illustrated with photographs taken by the boys to show their corn during the various stages of its growth.

Eight original essays ready to be copied, eight lots of pictures to be mounted, eight young corn growers

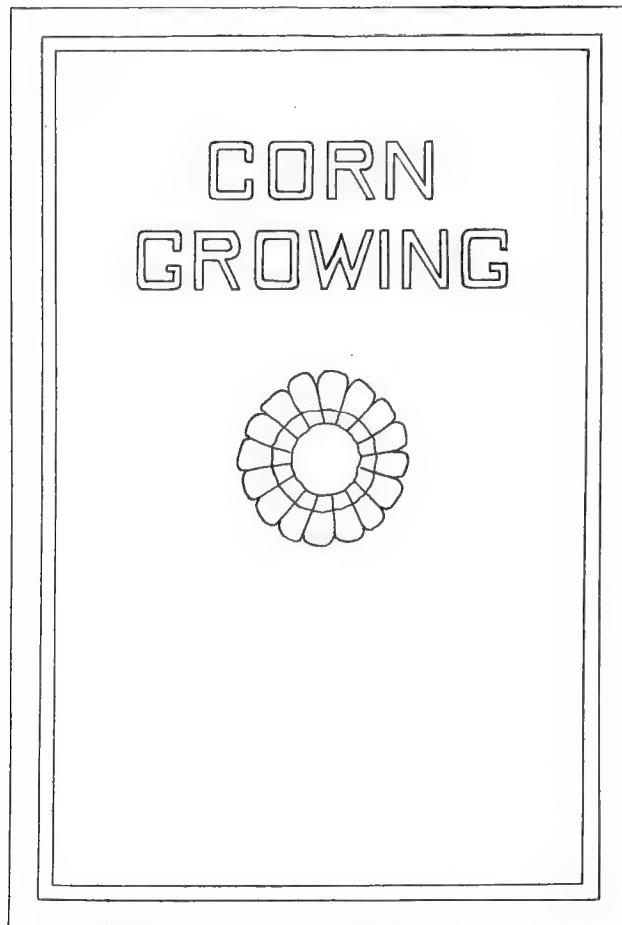


Fig. 5. Design of Booklet Cover, Made on Squared Paper.

brimming over with enthusiasm were passed over to the new drawing teacher. Her heart gave a throb of joy to think of the wonderful opportunity to teach bookbinding, lettering and design; then it dropped with a thud—the boys knew nothing about drawing! She looked at the principal, then at the expectant faces of the boys and gave her verdict—"I know that they can do it."

The boys had a problem of their own. They quickly surmounted all difficulties. They didn't have time to learn *how* to do things; they just did them.

Directions for making booklet for Corn Essay.

Materials required:

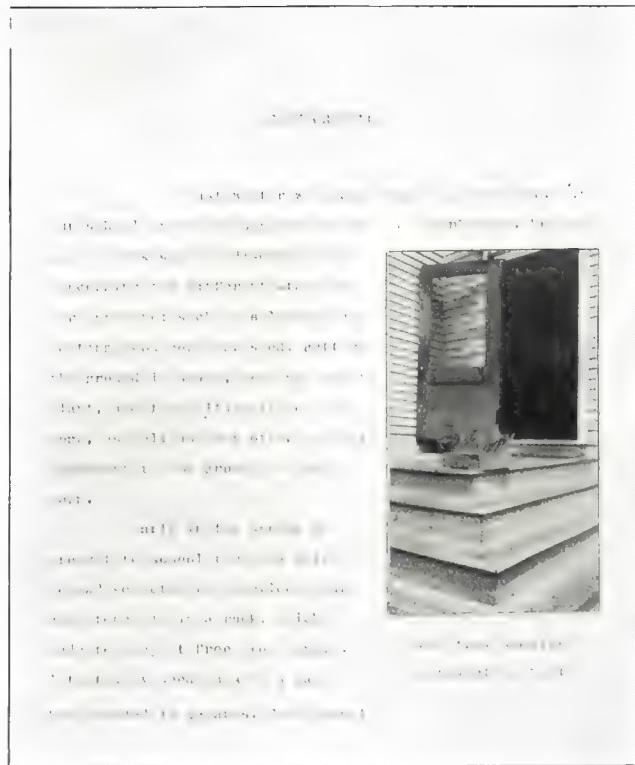


Fig. 6. A Page from the "First Prize" Essay. Typewriting by Student.

1 sheet $10\frac{1}{4}$ "x16" heavy, brown construction paper.
 1 sheet $9\frac{5}{8}$ "x15" light weight, brown construction paper.
 1 strip $2\frac{1}{2}$ "x $10\frac{1}{4}$ " dark-brown construction paper.
 2 9"x12" sheets 1/6" squared paper.
 10 sheets $7\frac{1}{2}$ "x $9\frac{1}{2}$ " unruled white paper for essay.
 1 piece of raffia.
 1 sheet architect's carbon paper.
 Crayons or water colors.

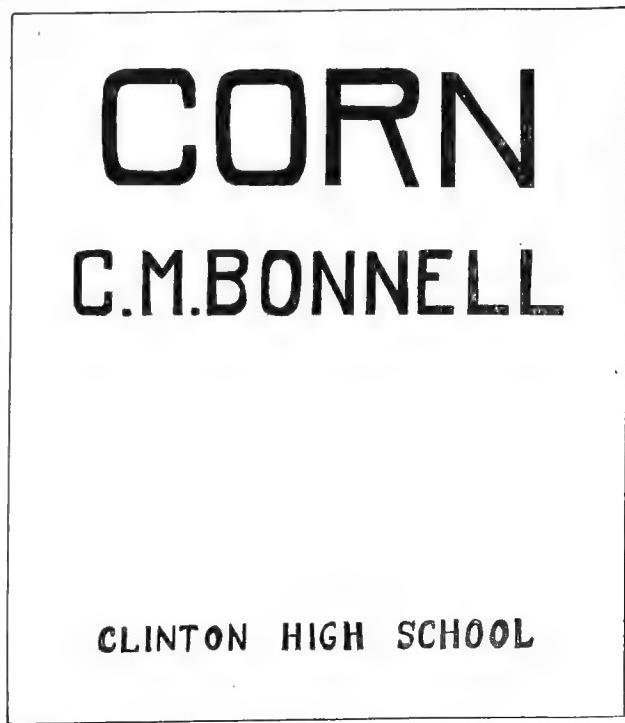


Fig. 7. Title Page from one of the Essays.

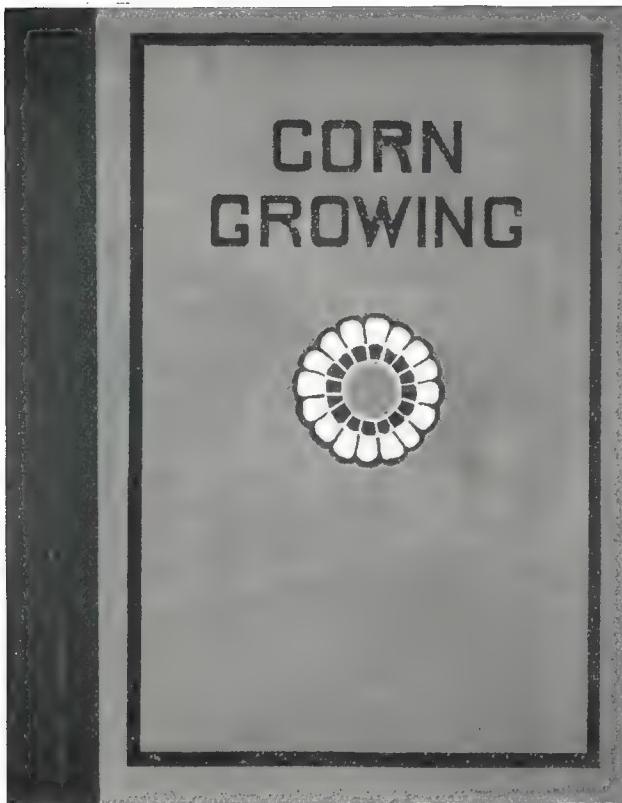


Fig. 8. Notice the interesting design suggested by the cross-section of an ear of corn.

- Ruler.
- Pencil.
- Punch.
- India ink.
- Ruling pen.
- Directions:
 1. Cut $10\frac{1}{4}'' \times 16''$ paper into two pieces, one $7\frac{3}{8}'' \times 10\frac{1}{4}''$, the other $8\frac{5}{8}'' \times 10\frac{1}{4}''$.
 2. Mark on squared paper rectangle $6\frac{3}{4}'' \times 10\frac{1}{4}''$. Block out spaces for lettering and design for cover.
 3. Draw letters and design in sharp outline. (See Figure 5.)
 4. Place carbon paper over $7\frac{3}{8}'' \times 10\frac{1}{4}''$ cover paper and transfer design with sharp pencil.
 5. Color design and letter with good hard crayons or water colors, care being taken to work out a good color scheme. The original booklets were worked out in monochromatic color scheme,—two shades of brown or grayed orange and touches of orange full intensity in corn design.
 6. Draw rectangle $7\frac{1}{2}'' \times 9\frac{1}{2}''$ on remaining sheet

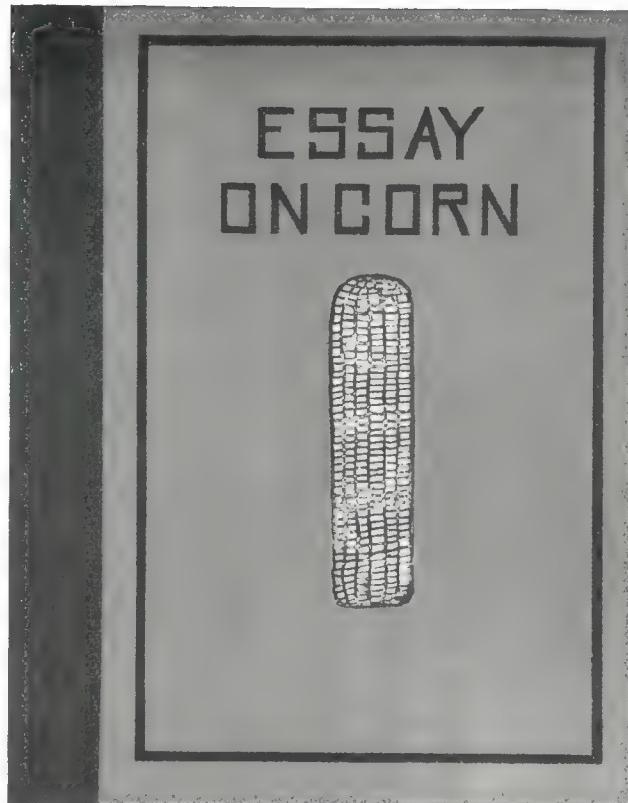


Fig. 9. A Booklet Cover, showing an ear of corn used as a design.

- of squared paper. Block out spaces for lettering of title page. Design letters.
- 7. Transfer title page design to white paper. Outline with ruling pen and fill in with pen or small brush.
- 8. Draw light line $\frac{5}{8}''$ in from $10\frac{1}{4}''$ margin of $8\frac{5}{8}'' \times 10\frac{1}{4}''$ cover paper. Score and fold on line.
- 9. Fold $9\frac{5}{8}'' \times 15\frac{1}{4}''$ sheet of construction paper in center for end sheets.
- 10. Assemble essay, title pages and end sheets. Place in fold of cover paper, the smaller piece being on top.
- 11. Punch holes thru booklet $\frac{3}{8}''$ from back and $1\frac{1}{2}''$ apart. Sew with thin piece of raffia. Raffia is used because it makes a flatter finish than corn.
- 12. Place front cover of booklet $1/16''$ from edge of sewed cover.
- 13. Score $2\frac{1}{2}'' \times 10\frac{1}{4}''$ strip of dark-brown paper in center and fold. Spread evenly with paste and place carefully over the back of booklet. Roll with a lead pencil.
- 14. Crease lightly with thumb nail the $1/16''$ space between cover and back.

WHEN you do what you want to do, honestly and squarely, it does not at all deserve to be called work, but is the most splendid sort of play, and every day is a holiday.

C. Hanford Henderson

HAND-WROUGHT JEWELRY

H. R. Sorensen, Proprietor Orno Shop, De Kalb, Ill.



THE sets which, to me, are the most interesting to mount are the baroque pearls or pearl slugs. The reason for this interest lies in the fact that each and every pearl must be mounted differently from every other one. It is very unusual to find two pearl slugs having exactly the same form, and therein lies the difference necessarily found in each mounting.

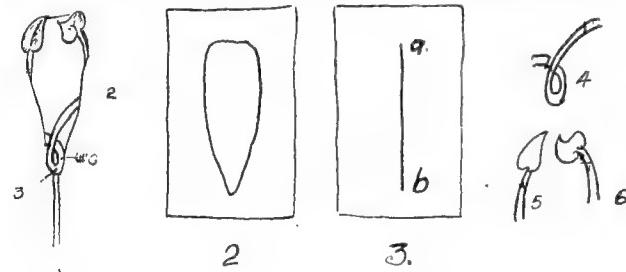
Pearl slugs vary greatly as to both shape and color, and these two facts must be taken into consideration when designing and setting. If one is fortunate enough to obtain the slugs directly from the pearl fishers, very fine specimens may be obtained for very reasonable prices. Many beautiful slugs, smooth and of good color and shape, are found in the Fox and Rock Rivers in Illinois.

Sometimes a pearl, tho otherwise good, has a bad spot, possibly a little discoloration, which must be covered with a leaf or flower when mounted. One should always keep in mind, however, that as little as possible of the good part of the pearl should be covered.

Figs. 13-16 in the December issue show a long, irregular pearl mounted in a scarfpin. We often see pearls of this style mounted with just a pin in the back of it, and no ornamentation whatever. This could not, of course, be considered expert jewelry work as it shows no artistic ideas. It does not do the pearl justice, either, for, to most people, the slug without any handiwork showing looks stiff and hard.

Neither should a mounting be symmetrical, as that sort of a design does not harmonize with the irregularities of the pearl.

The scarfpins referred to have a piece of silver on the reverse side of the pearl on which is soldered the ornaments. In Fig. 1, which is the same as Fig. 13



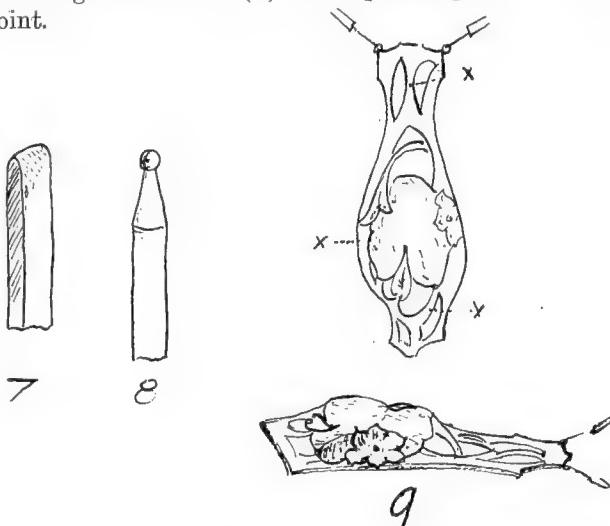
Sketch shows at 2 how much larger the silver should be than the pearl.

in the December issue, the back of the pearl is V-shaped and necessitates a piece of silver shaped the same way. The back should be made of material not heavier than 22 gauge, and should be left in quite a large piece until the shaping of it has been accomplished.

As this pearl had a straight ridge down the center of the reverse side, the dapping of the material was done in a straight line.

With a ball punch or narrow tool (see Figs. 7 and 8) depressions must be made in the piece of silver which will correspond as nearly as possible to the ridges in the back of the slug. The silver is placed on the lead-block

while dapping is being done. With the tool pressed firmly on the silver, start from point (a) Fig. 3, and dapp to point (b). To do this the tool should not be raised from the silver, but should be moved slowly along the line from (a) to (b) and continually tapped with the hammer. This will insure a smoother depression than if the punch were moved from place to place each time it was hammered. Continue dapping until the pearl fits in the depression. As this pearl was much thicker at the top, the depression at (a) was quite deep, becoming shallower at (b) as the pearl tapered to a thin point.



The superfluous material should next be cut away, leaving the depressed part a trifle smaller than the outline of the pearl except at the lower point, onto which is soldered the portion marked (c) Fig. I. The silver back, being merely for strengthening purposes and not for ornamentation, should not be visible from the front.

After the back piece has been cut out, the sides may have to be forced to the sides of the pearl, by the use of small pliers.

When the plate has been fitted as closely to the back of the pearl as possible, the edges of it are filed like a knife edge, thus being made to appear as much as possible to be a part of the pearl.

Before the leaves and design parts are made, the finished product should be pictured mentally. The side as well as the top view must be considered. The top view cannot show the entire leaf or stem. Therefore, when the leaves are transferred to the silver (gauge 22), they must be traced a little larger than the design and the stems left considerably longer, so that they will allow for the depth of the stone and overlap the back piece at least one-eighth of an inch. This overlapping is done so that the soldered place may be strong enough not to break when the pearl is set.

In Fig. 1, the designed portion, marked (c), appeared as Fig. 4 immediately after cutting out. It will be noticed that allowance for the bending over on the back has been made. When fitting the piece over the pearl, the pearl is placed in the back piece and the design part placed on top of it. Be it understood that

points 1, 2 and 3, Fig. 1, are to be soldered to the back piece.

It will be necessary to shape the piece by dapping on the reverse side and bending with the pliers. When the piece is shaped to fit, the pearl should be removed before any soldering is done.

If one finds it difficult to make all three points touch the back piece at one time, one point may be soldered first and then the other two fitted and soldered later. If trouble arises in making the design part stay in place while being soldered, binding wire may be rolled up into a ball or form as nearly like the pearl as possible, and placed so that the piece to be soldered rests on it as it would rest on the slug.

The leaves should be sawed out, allowance being made, as was previously mentioned (Figs. 5 and 6) and then shaped to fit the pearl. They may be held in place by the use of a roll of binding wire as was explained before, while they are being soldered.

It is always a problem how to solder the leaves so that the pearl may afterwards be inserted without too great difficulty. The leaf on the right-hand side may be soldered almost exactly in the position it will have after the pearl is set. The other leaf, however, must be soldered so that the pearl may be placed in position. After the pearl is in its place this leaf is forced over the stone, thus holding the pearl securely.

At the places where the stems are soldered to the back piece, they should be filed down so that they appear to be a part of the back instead of something soldered on.

The pin is soldered to the back and the finishing done as has been explained in previous articles.

One other problem will be explained briefly, that of a pendant shown in Fig. 9.

This pearl is quite unusual, being very thick thru the center. The portion of it which is visible is of a very good white, whereas the part that the flower covers is a yellow color and necessarily was covered. The flower, of course, is also for the purpose of holding the pearl.

The pendant part is made of one piece excepting the conventional leaf, the flower and the ordinary leaf.

In this piece of work the silver in back of the pearl is removed to permit the pearl to project thru the silver, thereby reducing the height of the pearl.

The pendant part is dapped so as to render the stems more graceful. The dapping was done on the reverse side of the silver at points indicated by X.

The object in giving two views of the pendant is to show clearly the difference in a top view and that of the side. Take the flower for example, the top view shows it to be narrow; the side view gives the exact size.

I am making this explanation to emphasize the fact that all designs must be pictured mentally from all angles before making. By doing this all allowances can be considered and no mistakes made.

After understanding these two problems one should be able to work out for himself designs appropriate for almost any pearl slugs.

ORGANIZATION OF TEACHING MATERIAL

Fred D. Crawshaw, University of Wisconsin
(Seventh Article)



OR the most successful teaching some of us, especially in our beginning work, need specific instructions no matter how well we have been prepared in a training school. This need is supplied thru teachers' meetings. A series of six for a year is suggested under the heading: "Yearly Teachers' Meetings Held by Supervisor." These are for all teachers doing a similar kind of work. Additional meetings may be organized for new teachers only. In these, the actual classroom performance will be followed, supervisor and teacher working together as later teacher and children will work together. In the teachers' meetings an experienced teacher, rather than the supervisor, may often render the best service as a demonstrator or leader. In such meetings, the basis for active group or community co-operation is established and the fundamental elements in teaching emphasized naturally and objectively. In them the supervisor finds some of his greatest opportunities effectively to suggest methods and standards without calling attention to them in a formal or objectionable way.

Note for semester: The supervisor will be glad to receive outlines from individual teachers and see proposed projects which should be prepared in advance of the classwork by pupils.

*Yearly Teachers' Meetings Held by Supervisor.
(All Teachers Doing a Similar Work.)*

Meeting No. 1. General scope of work for year. Introduction of new methods, materials and projects. Opportunities for use of school and community activities. Observation trips and subsequent natural correlations.

Meeting No. 2. Outlining new work in course by complete or partial demonstrations. Show where *dictation* and where *development* lesson should be used. Place proper emphasis upon *demonstration* and *individual instruction*.

Meeting No. 3. Holiday plans. Closing work for semester. Requirements for *technique* reviewed. Improvements possible and *how to secure them*.

Meeting No. 4. Inspirational conference for second semester. Endeavor to increase *efficiency* in corp of instruction. *Pedagogical basis* for planning and doing work. *Reflection* upon first semester's work.

Meeting No. 5. Special emphasis upon significance of work for *spring months*. Get children out of doors. Deal with *out of door* material. "Spring fever" and discipline element.

Meeting No. 6. Closing the year. Overtime requirements—*how to present them*. Closing exhibit. Importance of *satisfaction* of each individual *pupil, parent and teacher*.

Note—The purpose of the meetings held by the supervisor should be to establish a large point of view and reference to *typical methods of instruction*. *Classroom practice, the place of technique and skill, opportunities for developing appreciation and creative ability, correlations with school and community activities*, etc.

Every meeting must be carefully planned to give every individual an opportunity for initiation in methods

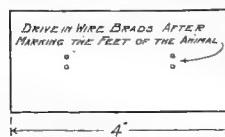
IV GRADE

PLATE I

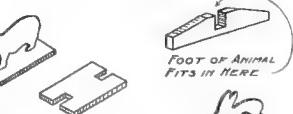
COPING SAW PATTERNS

No. 4. STAND.

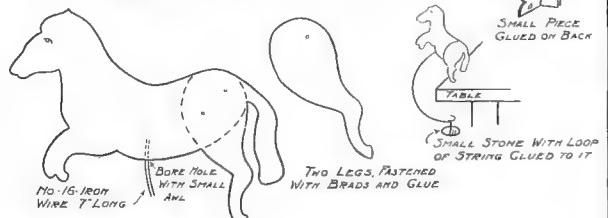
HAVE THE PUPILS DRAW FROM LARGE DRAWING; FIRST ON PAPER THEN ON WOOD.



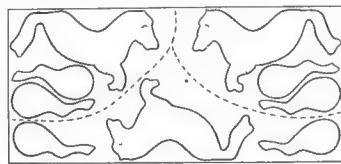
No. 5. MAKE DIFFERENT STANDS TO SUIT THE ANIMALS MADE USING SCRAP PIECES OF WOOD SEE WHO CAN DEVISE A NEW SUPPORT



No. 6. BALANCING HORSE



BALANCING HORSE PATTERNS SHOWING THE BEST WAY TO CUT OUT OF THE BOARD MAKING THREE HORSES TO EACH BOARD THREE CHILDREN CAN WORK TOGETHER MARKING OUT AND THEN SAW APART ON DOTTED LINE NOTE THE DIRECTION OF THE GRAIN FOR STRENGTH.



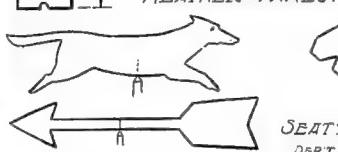
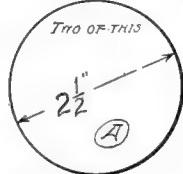
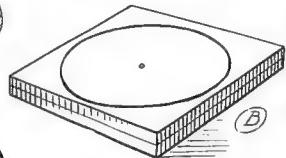
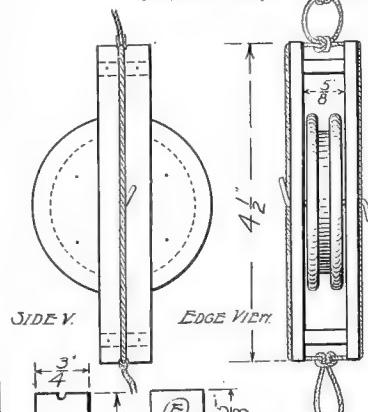
SEATTLE PUBLIC SCHOOLS
DEPT. MANUAL ARTS
Ben Johnson
G.P. Reynolds

IV GRADE

COPING SAW PATTERNS

PLATE III.

PATTERNS.
FOR DIRECTIONS SEE FOLIO

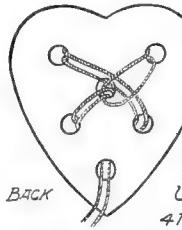
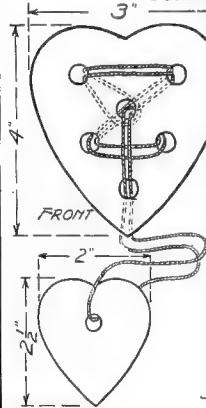


WEATHER VANES.
SEATTLE PUBLIC SCHOOLS,
DEPT. MANUAL ARTS
Ben Johnson
G.P. Reynolds

IV GRADE

PLATE II

COPING SAW PATTERNS

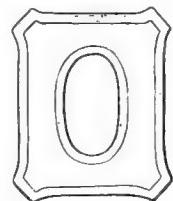
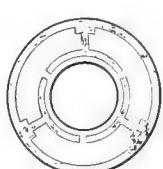
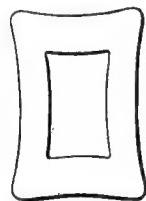


HEART PUZZLE
THE HOLES ARE
 $\frac{1}{8}$, DRAWN WITH
A COMPASS &
SAWED OUT
PAINT WITH RED
WATER COLOR
USE FANCY STRING
4FT LONG

PUZZLE - TO SEPARATE THE
TWO HEARTS WITHOUT UNTYING
THE STRING

PICTURE FRAMES

SEE THE FOLIO FOR DIRECTIONS



SEATTLE PUBLIC SCHOOLS
DEPT. MANUAL ARTS
Ben Johnson
G.P. Reynolds

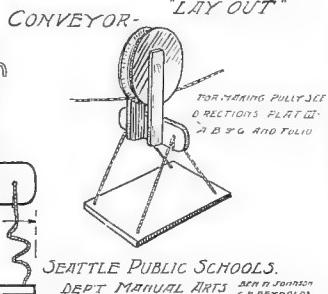
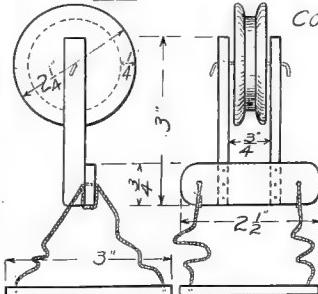
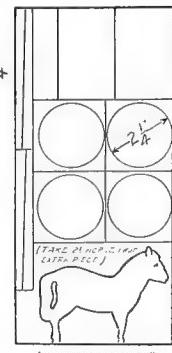
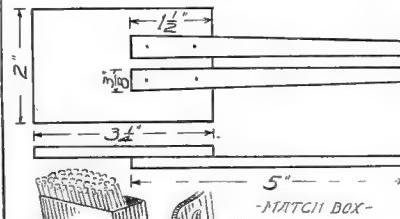
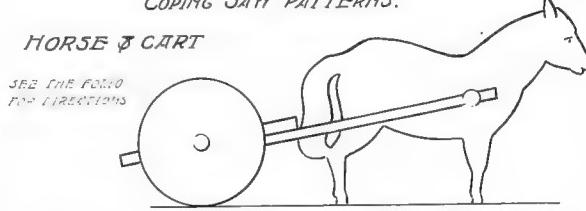
IV GRADE

COPING SAW PATTERNS.

PLATE IV

HORSE & CART

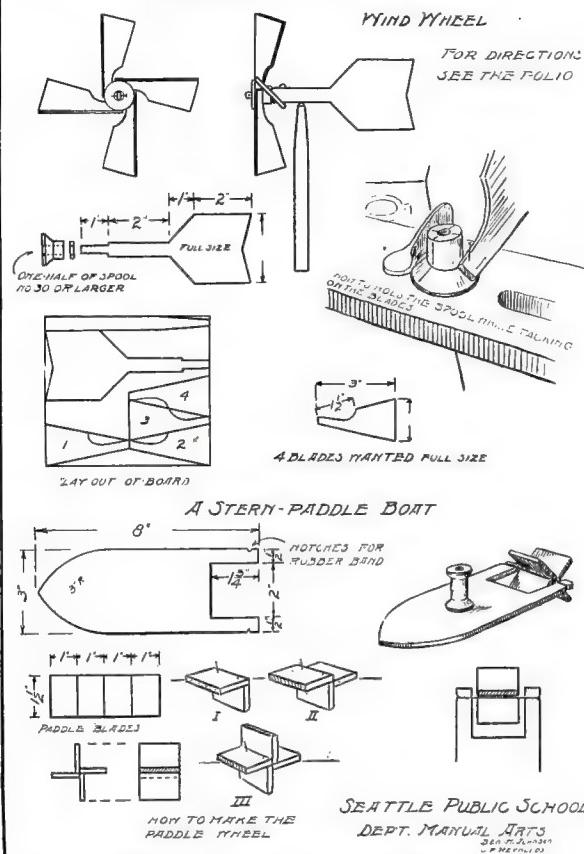
SEE THE FOLIO
FOR DIRECTIONS



IV GRADE

COPING SAW PATTERNS

PLATE V



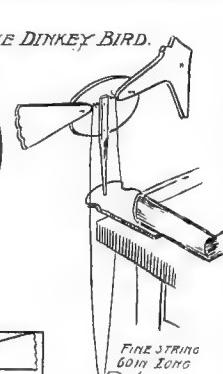
IV GRADE

COPING SAW PATTERNS

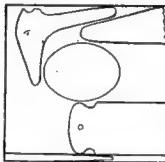
PLATE VII

SEE THE FOLIO FOR DIRECTIONS

THE DINKEY BIRD.



THE ATHLETE



LAY OUT



DIAGRAM OF STRINGING

SEATTLE PUBLIC SCHOOLS DEPT. MANUAL ARTS BEN M. JOHNSON CLARKE REYNOLDS

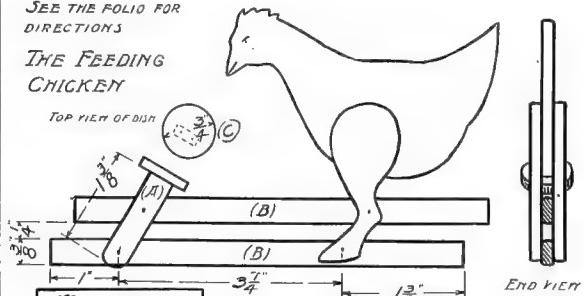
IV GRADE

COPING SAW PATTERNS.

PLATE VI.

SEE THE FOLIO FOR DIRECTIONS

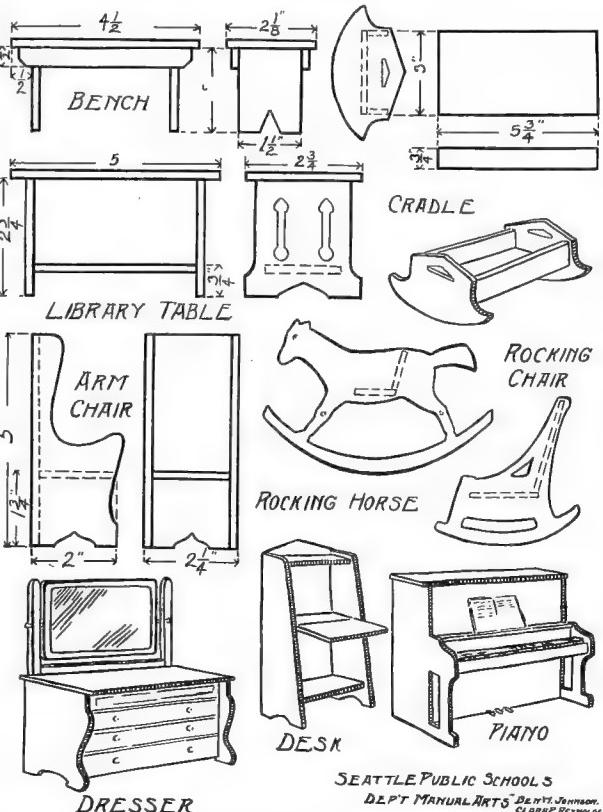
THE FEEDING CHICKEN

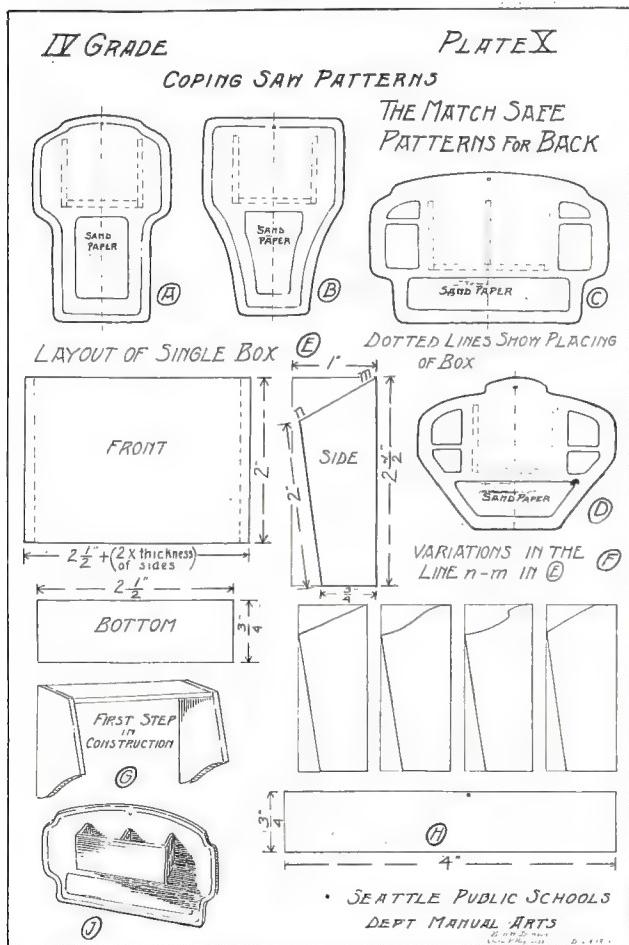
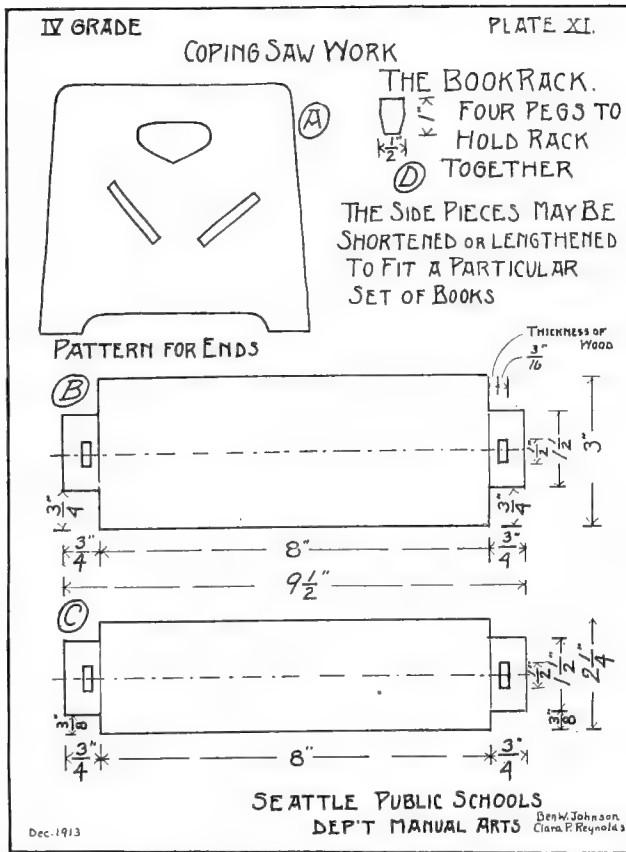
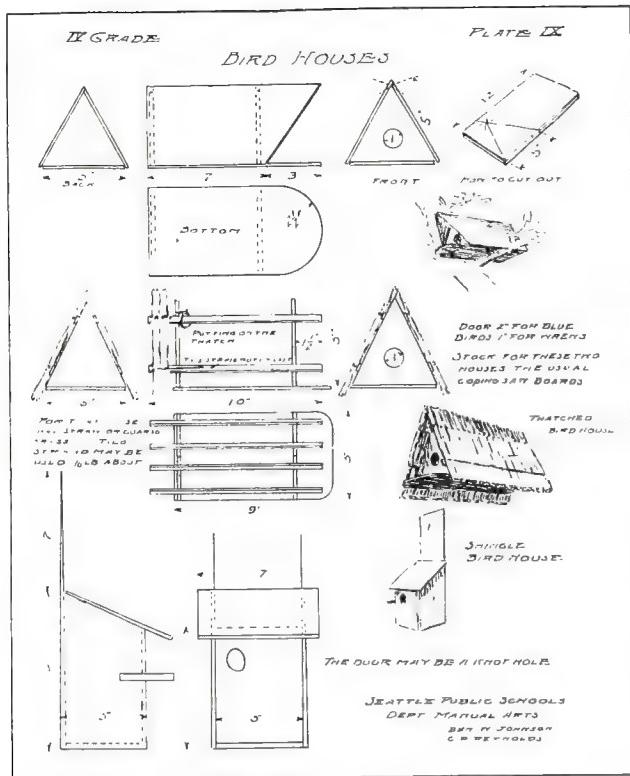


IV GRADE

COPING SAW PATTERNS
DOLL HOUSE FURNITURE

PLATE VIII.





PROBLEMS FOR FOURTH GRADE, SEATTLE, WASH., SCHOOLS.
of classroom procedure, and at the same time, to establish good standards and requirements expected by all.

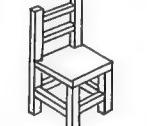
The second supervisors' outline, herewith illustrated by "A Series of Charts for Handwork in the Fourth

Grade," represents one which a supervisor might use effectively in his teachers' meetings and one which teachers may later use in their classwork. It is one which is used in both these ways in Seattle, Wash., B. W. Johnson, Supervisor. Each chart defines some particular project which all in the teachers' meetings may work out together. Besides, these are given many helpful suggestions for other related projects which may be constructed by individual pupils in regular grade work.

A latitude of choice in the selection of projects may be made by each teacher and, if deemed advisable, by each pupil in the development of construction problems involved in the making of projects within any particular group. To accompany these charts with a simple booklet of instructions, giving dimensions and kinds of stock to use, and a few suggestive helps in methods of teaching, means a flexible and yet well defined outline. An elaboration of it by each instructor in the preparation of classroom plans, means a substantial course of study. These charts, shown on pages 173, 174, 175, with the treatment of them suggested above, represents the plan of developing grade construction work courses of study in all the grades up to the high school in Seattle, Wash.

The third course or supervisors' outline, "Woodworking, Grades Five to Eight," is a progressive series of steps for each grade, with points of emphasis made under important headings such as "Exercises," "Tools" and "Demonstration" for each step or group. This series of charts has been developed for woodworking in the grades by a committee of the Wisconsin School Arts and Home Economics Association, and is herewith shown by courtesy of the Wisconsin State Department of Public

INDUSTRIAL-ARTS MAGAZINE

WOODWORKING GRADE V					
Group	Exercise	Tools	Demonstration	Projects	Sketch
I Measuring; rough sawing; Nailing; 1" stock;	Measuring, sawing; squaring; joining of L's; without halving	Ruler & pencil, back saw; try square; hammer	Emphasis on squaring, nailing, and measuring.	1. Frame pieces for drying cleaned leaves, etc. 2. Plant stand. 3. Play things. 4. Simple kite.	1. Pair of these strips 
II Same as above with plane added; boring.	Same as above with whittling added; planing; bevel sawing; boring	Ruler, hand saw, try square, knife; plane;	Careful measuring, beginning knife work; grasp of knife; method of planing;	1. File board. 2. Key. 3. Sun dial. 4. Small game board.	2. 
III Cope sawing; whittling; 1" stock.	Sawing; whittling; compass work;	Hand saw; knife; ruler; compass	Emphasis on relation of the grain of the wood to the cut, and the manner of holding project while whittling concave and convex cuts; compass, clever knife work	1. Sand-paper block 2. String wind. 3. Thermometer back. 4. Simple toys	3. 
IV Same as above with nailing and construction added.	Sawing, whittling, nailing	hand saw, knife; hammer; coping saw, awl	Coping saw; careful nailing, smoothing rough sawed edges with knife	1. Calendar back. 2. Whisk broom holder 3. Toys.	4. 
V Combination work using all tools and exercises	All	All thus far used	Design of outline and proportion, construction details.	1. Doll furniture 2. Playthings; a. large kite, b. small wagon, c. hay rack. 3. Outdoor projects a. chicken coop, etc. b. etc.	1. 

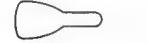
GRADE FIVE PROBLEMS, WISCONSIN STATE COURSE.

Instruction, C. P. Cary, superintendent. With many other outlines, they are contained in a bulletin on "Courses in Manual Training" which may be secured by writing Supt. Cary, Capitol Building, Madison, Wis.

This course gives something which does not always materialize in a school where woodworking is carried on during three or more consecutive years, viz., a definite progression without unnecessary repetition from year to year. The projects suggested for each group in this

outline, are only a few of the possible ones within each group and the particular sketches shown are each suggestive only of one particular project within a group. In looking over the names of projects, it will be observed that opportunity of selection is offered both with respect to the technical capabilities of individual pupils, and also with respect to community and vocational needs.

Indeed, a course of study represented by any one of the outlines shown, suggests two important principles

WOODWORKING GRADE 6						
GROUP	EXERCISES	TOOLS	DEMONSTRATIONS	PROJECTS	MATERIALS	SKETCH
1. Practice planing and sawing. Emphasis upon true surfacing and upon use of the turning-saw and the spokeshave.	Planing and sawing. Designing and shaping. Symmetry of form.	Saws, jack-plane, knife and spoke-shave with laying out tools.	Ripping and cross-cutting. Shaping with the turn-saw. Symmetrical patterns. Use of spoke-shave and knife.	Butter paddle. Stirring stick. Paper knife.	Poplar(soft).	
2. More accurate planing. Boring and fastening on semi-large work.	Planing to size. Use of brace and bit, hammer and screwdriver.	Plane, brace and bit, saw, hammer and screwdriver.	Partial rule for planing. Methods of boring. Use of hammer and screw-driver. Simple principles of construction.	Game board. Crate. Bin. Cement forms. Flower box.	Basswood. Pine.	
3. Accurate planing and accurate lap fitting of three or more pieces.	Planing very closely to size. Use of square, screwdriver, and chisel.	Former with addition of chisel.	Complete rule for planing. Square for testing. Place for nails and screws. Splitting of timber. Allowance for shrinkage etc.	7" square. Blackboard-square. Clothes rack.	Basswood. Pine. Gum.	
4. Accurate planing and fitting of more than two pieces by butt joints.	Accurate use of former tools. Blocking ends. Use of chisel in simple joints.	Former with block-plane and chisels.	All methods and tests for planing to three dimensions. Types of joints. Use of block-plane. Handling of chisels in paring and vertical chiseling.	Pencil holder. Accurate boxes. Stationary case. Newspaper holder.	Pine. Poplar.	
5. Difficult planing and fitting, with design element made strong.	Use of plane in tapering. Gouging, sandpapering, and rasping. Glue in assembling.	Former with bracket-saw and rasp.	Elements of design. Use of gouge. How and when to use sandpaper and rasp. Proportion. Use of glue. Principles of assembling.	Salt box. Spice box. Broom holder. Bracket. Solid end stool.	Pine, poplar, gum, cherry, mahogany.	
6. Combination of former processes in semi-large project of interest to the boy.	All former exercises with possible additions as needed. Little emphasis upon these.	All former tools with necessary additions.	General information for construction. Gathering, forestry, care of tools, etc.	Wagon, wheel-harrow, sled, bench.	Any soft or semi-hard wood.	

GRADE SIX PROBLEMS, WISCONSIN STATE COURSE.

WOODWORKING GRADE 7				
GROUP	PROCESSES	TOOLS	PROJECTS	SKETCH
1. Laying out, sawing, nailing or screwing, duplicate parts.	Measuring. Pencil lining with try-square. Sawing—rip and cross cut.	Back-saw. Rip-saw. Try-square. Hammer.	Crate. Tool rack. Window stick. Clothes board.	
2. Planing to size. Boring.	Planing. Gauging and squaring. Accurate sawing. Boring.	Plane. Square. Brace and bit. Cross-cut saw. Hammer. Screwdriver.	Gambo board (Bagetelle). Counting board. Bread board. Flower box.	
3. Use of coping saw. Spokeshaving. Chiseling. Hinging. Half-lap joint.	Sawing curves with coping-saw. Spokeshaving. Paring with chisel. Simple vertical chiseling. Hinging.	Coping-saw. Spokeshave. Chisel.	Sleeve board. Book rack—book end. Round or elliptical bread board. Round top stool. Clothes stick.	
4. Simple gouging. Simple modeling.	Use of gouge and compass. Making of curved surfaces.	Gouge. Compass.	Pencil tray. Mirror frame. Coat and trousers hanger. Toy boat. Hammer handle. Neck yoke.	
5. Simple joinery in "Box" construction, using butt, ledge, tongue and groove, joints.	Laying out simple joints. Sawing. Chiseling. Nailing.	Saw. Chisel. Hammer. Nails.	Bread box. Knife and fork box. Bracket shelf. Any accurate construction involving duplicate parts and simple joints.	
6. Extra project. Assembling using butt and dowel joint and introducing finishing.	Laying out dowel holes also holes for lag screws. Squaring, sawing, chiseling, finishing.	Spw. Square. Chisel. Mallet.	Stool or similar small furniture using butt and dowel joint principally.	

GRADE SEVEN PROBLEMS, WISCONSIN STATE COURSE.

in a supervisor's plan for work for any period.

First. The outlining in sequential form of a series of blocks of teachable material in each of which important and essential elements in instruction are indicated and correlations suggested.

Second. The presentation of problems in a definite but not conclusive form to be solved by members of a class, the individuals of which may select problems within each group, depending upon ability and inclination.

True, it may be advisable and even necessary, as an administrative expedient and as a good teaching principle also, that for a time in the beginning of any course of study all pupils in a class should make the same project or solve whatever problem at one and the same time. When this is done, the teacher and not the pupil will select the problem. The purpose should be to standardize performances somewhat, establish a modicum of experience and a basis for individual work.

WOODWORKING GRADE 8					
GROUP	EXERCISES	TOOLS	Demonstrations	PROJECTS	SKETCH
1. Review accurate sawing and planing.	Accurate planing. Bevel or round.	Jack-plane. Block-plane. Saws. Laying out tools.	Planing straight, beveled, and circular surfaces.	Straight edge. Towel roller—or hanger.	
2. Gluing. Rip sawing. Joining edge to edge.	Planing. Gluing. Chiseling. Boring.	Planes. Clamps. Brace and bit	Planing glue joint. Preparing glue. Methods of clamping.	Bread board or desk tray glued up of different woods.	
3. Advanced construction. Box type of joints—ledged, tongue and groove, miter.	Chiseling. Grooving. Sawing miter joint. Making practice joints.	Chisels. Miter-box. Rabbet-plane.	Making joints as—rabbet, half-lap, miter. Squaring up and planing duplicate parts.	Handkerchief box. Picture-frame with miter or half-lap joint.	
4. Advanced modeling with draw-knife and spokeshave.	Planing. Modeling.	Spokeshave. Draw-knife. Coping-saw. Jig-saw.	Laying out. Use of spokeshave. Study of form.	Hammer handle. Canoe paddle. Wagon tongue. Neck yoke.	
5. Advanced joints mortise and tenon.	Laying out duplicate pieces. Cutting cut mortise and tenon. Finishing. Upholstering. Practice joints.		Laying out mortise and tenon joints. Cutting and fitting above joints. Finishing.	Tuboret. Stool. Umbrella rack.	
6. Elementary furniture of skeleton type.	Application of different joints in one project.	Machines: Circular saw. Planer. Band-saw.	Laying out stock in cabinet-maker's way. Designing. Cutting stock. Laying out joints. Assembling.	Small table. Book rack. Magazine holder.	

GRADE EIGHT PROBLEMS, WISCONSIN STATE COURSE.

COSTUME DESIGN AND ILLUSTRATION

Ethel H. Traphagen

(Fifth Article)

Pen and Ink.

PEN AND INK is a very interesting and much used medium in fashion work. It can be divided into several headings as, work for newspapers, for magazines and for catalogs. And these again can be subdivided into groups. For instance, there is the Pen and Ink newspaper proper style. This is paid for by the newspaper

much stress laid on the filling of space in either of these cases as in the department store work. See illustration Numbers 46 and 47. Ben Day often, and wash sometimes, are combined with newspaper Pen and Ink. See illustrations 46, 45 and 38a.

Magazines have the same three classes of Pen and Ink drawings and the same principles hold true. See illustration Numbers 48a, 49, 50a.



Illustration 38a. Permission, The Globe.

and is done in a broad, bold way with no particular attention given to seams or texture. See illustration Number 38a.

There is newspaper pattern drawing. This is paid for by the pattern company and here more attention is given to seams, tucks, darts and the like than to texture. See illustration Number 45.

Again, there is department store advertising. This is paid for by the Department Store and here seams are ignored and attention concentrated on texture and expression of the style. See illustration Number 46.

A good deal of space is often devoted to the newspaper's own drawing while the pattern drawing is usually given a column or two and there is not quite so

The magazines, however, are printed on superior paper and with better ink so that charming effects with delicate washes which would be entirely lost in newspaper reproduction, can be obtained. See illustration Number 47.

Ben Day is used with great success in magazines. See illustration Number 48a.

In the best Pen and Ink work for catalogs and advertising care is taken not only to suggest texture and detail but to express the general characteristics of the garment and its special charm. A good example is given in illustration Number 47, which was used for a catalog and also magazine advertisements.

Pen and Ink work for pattern catalogs is usually



Illustration 45. Courtesy, Home Pattern Co.



Illustration 47. Permission, Stern Bros.



Illustration 46. Courtesy, Frederick Loeser Co.



Illustration 48a.

done in a stiffer way than that done for magazines and newspapers. This is because in the great care used to show every seam and detail much of spontaneity is often lost; nevertheless great improvement in this matter has been made of late by a number of the pattern houses as



Illustration 51. Permission, The Butterick Publishing Company.

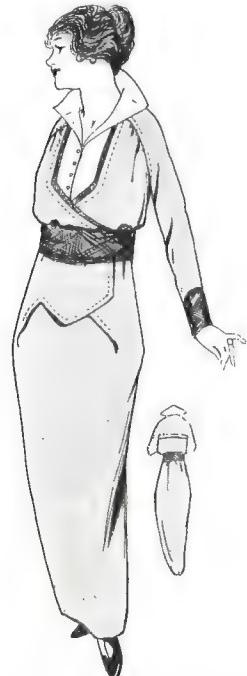


Illustration 49. Permission, Vogue.

Illustration 50a. Permission, Ellsworth Co.

is shown in the clever little drawing of underwear. See illustration Number 51.

In doing Pen and Ink the beginner will find Gillett's 290 and 291 very agreeable to work with because of the elasticity. A waterproof ink is useful where wash is to be combined with pen and ink, but many people, for general use, prefer a non-waterproof and French black ink.

Use two or three ply bristol, plate (or smooth) finish if for ink alone, kid finish if washes are to be added.

A large drawing board placed at the right angle, up against a table will give better results than the board flat on the table. Usually speaking it is best to work from the top down and from left to right, but when a long straight even line is desired satisfactory results will be obtained by keeping the right arm from the elbow.

resting on the table and drawing away from you. Do not get your lines too close together. Observe the difference between a dry, harsh line and one full of variations or color. Practice beginning a line dark and ending light and vice versa. Make your line express the soft delicacy of skin (see illustration Number 51a) the lightness of chiffon or the heaviness of velvet. Make every line you put down tell or mean something; this requires study and application.

It is understood that a pencil sketch is made first and that the ink is put in afterwards. Reproductions of pen ink are called line cuts. For descriptions of Ben Day, Stipple, Spatter work, etc., which are used in connection with pen and ink see article on Methods, in the December MAGAZINE.

There are great differences in the make-up of different people. Some of us seem born with a strong mechanical bias and others with a delicate sensitiveness. In the one case we will tend to draw strong and precise lines, in the other to draw lines that are light and subtle tho by no means to be confused with the weak and broken lines of inexperience. The distinction is one that will be noted not only in our modern art but also in old Japanese prints. We cannot declare either of these manners good or bad to the exclusion of the other, for each of them, and all the gradations between, have their purpose. The great thing is to find out the method that is most natural to you and improve that to the utmost. Do not be discouraged if your forte is the delicate sketchy line and if you do not succeed with the precise, mechanical one. Find the place that is waiting for you where your particular manner is needed.

Too often those in charge of art departments do not appreciate any kind of work except that which they happen to use. Do not let them discourage you but remember the words of Carlyle, "The Block of Granite



Illustration 51a.

which is an obstacle in the pathway of the weak becomes a stepping stone in the pathway of the strong."

THREE are three points which are of value in teaching design. First, to educate the children in the schools to a proper conception of art; second, to give the children practical experience with excellent design; third, the ability to make a design generally good.—*Walter Sargent.*

INDUSTRIAL-ARTS MAGAZINE

Board of Editors

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EDITORIAL

COMMENCEMENT ORATORY.

WE begin to hear the call already for suitable subjects and material for graduating orations, essays, theses, etc. It is a profound pity that so much energy should be wasted in the discussion of such subjects as are very commonly attacked by the youthful graduates of our high schools. It has been quite customary for such topics as the following to be the objects of these earnest but futile assaults: "The Conditions of Success," "Uneasy Lies the Head that Wears a Crown," "Self Reliance," "To the Stars thru Difficulties," and other interesting legends about which high school students, in the very nature of things, can know but little.

A bright young man was heard to deliver a discourse on "Self Reliance." In the fifteen minutes of effort, he had to be prompted seven times!

There is growing up a saner attitude toward such occasions as Commencement. Boys are beginning to discuss in their graduating essays such topics as: "My Experiences in the Cultivation of an Acre of Corn," "The Principles of Wireless Telegraphy," "The Carpenter's Trade, Based upon my Father's Experience of Twenty-five Years." Girls are beginning to write their essays on such subjects as: "A Balanced Meal," "Costume Design for the Average Housekeeper," "What Constitutes Cleanliness in the Kitchen?" "Appetizing Dishes from the Cheaper Cuts of Meat."

Such topics based upon experience and intelligently discussed are worth infinitely more from every point of view, and by their use, even the high school student may contribute substantially to the general intelligence of the community.

THE DEMOCRACY OF ART?

A REPORT from Paris, in the December London Studio, states: "When the great art societies (of France) saw the way in which the barbarians treat works of art, both ancient and modern, destroying for the mere pleasure of destruction libraries, cathedrals, art treasures of all kinds, it was at once unanimously agreed that German and Austrian exhibitors should be forever banished from our salons and exhibitions; and the disappearance of German shops will result in the removal from our midst of all productions of that country."

Such sentiment reminds us of the back yard and cellar-door prohibitions of our childhood.

The great Napoleon thought otherwise when he brought to Paris, by fair means or foul, the art treasures of a continent. It is a strange, new decision in France

that would exclude the art of a people because they do not hold similar standards of civilization. Such a decision would remove from the museums of France much of their most precious contents, and would ultimately defeat France more effectively than armed invaders, for by such action France will lose her most subtle charm—the democracy of art.

FOR AND AGAINST.

IN meetings of manual arts teachers there is seldom a lack of discussion when opportunity is given for it. This is a healthy sign, and reflects not only active interest, but may reflect conviction on methods and principles.

It is to be noted from the reports of these meetings, however, that lengthy discussions often close with a speech from the chairman, or some experienced teacher in attendance, who proceeds to close the discussion by showing conclusively that there is after all no difference between the points of view. Like Mr. Bangs, in his solution of the drama, we feel that "a lot of trouble might be avoided if the villain and heroine had married in the first act."

If the chairman of a round table meeting would restate clearly the points of discussion as they are made, it is probable that much valuable time would be saved.

A WEAKNESS OF THE CO-OPERATIVE PLAN.

WE are constantly reminded that a comprehensive survey of industry is necessary before establishing any system of industrial training, and that it is the only scientific and reliable method of ascertaining how many workers to train for industry and the best methods of training them. Our colleges have been severely criticised for flooding the market with more engineers than are needed. Schools are urged not to prepare children for occupations in which they cannot find jobs.

Is not the so-called Fitchburg plan of co-operative education the embodiment of unscientific procedure in this regard? Instead of training one boy for each job, it trains two boys for that job. What is to become of the boy who does not get the job at the completion of his apprenticeship? To be sure there are jobs in other cities and in other factories, but this excuse might be offered for teaching ice-cutting in New Orleans.

THE CHOICE OF SPEAKERS.

IF meetings and conventions are to continue to influence educational tendencies and policies in such a marked degree, considerable care should be exercised in the selection of speakers for these meetings. Especially is this care necessary if no time is allowed for discussion or debate.

It has become quite customary to have some speaker in a national convention proceed to make sensational criticisms of some phase of school practice, or exploit some ill-advised scheme. Because no time is allowed for discussion, the speaker "gets away with it," and the next day the press gives scare-heads to the attack on the schools or praises the new innovation, with the comment that the statements of the speaker went unchallenged.

The speaker is thus advertised as an authority on educational matters and is then invited to speak at yar-

ious meetings at prices ranging from \$50 to \$200. The utterances of the newly fledged prophet in education are accepted at face value and in a comparatively short space of time the influence of his speeches is widespread.

There are two methods of curbing this practice. One is to refuse to allow persons of this character a place on programs. The other is to assign some sane person to a discussion of their addresses. The discussions should be open and persons assigned to discussion should not be too considerate of the feelings of the speaker. They should be entirely impersonal but straight to the point at issue.

EDUCATIONAL EXPERTS.

A NEW term has recently appeared in educational literature, and it would seem that its use will shortly become more prevalent. We refer to the term *expert* and more particularly to the phrase, *expert in industrial education*. We offer no objections to the proper use of the term but there are a few points worthy of consideration. The degree Ph. D. and the term *expert* are by no means synonymous. The letters Ph. D. appended to a man's name signifies that the individual has done certain prescribed work in an educational institution. The degree does not necessarily stamp that individual as an expert in anything as education does not necessarily imply broad judgment or experience.

Expert and *experience* are derived from the same root. Expert signifies one who has acquired skill thru experience. College degrees denote the attainment of certain standards in a college. We are constantly reminded that expert machinists or mechanics cannot be made in a school and graduates of technical schools are slurringly dubbed kid-gloved mechanicians who are not desired in industry. How about school-trained doctors of philosophy in education?

The present tendency seems to be to award the best positions and the highest salaries to the persons who can most eloquently address an audience of educators. We should also remember that a commanding presence, a flow of eloquence, and a six-cylindered vocabulary are not guarantees of sound educational ideas, or of teaching or executive ability.

If the present movement for industrial education is really to assist in solving the industrial and educational problems, its leaders must in reality be not only educational experts with first hand knowledge and skill acquired thru experience, but they must also have actual knowledge of industrial conditions and needs. They must be *industrial education experts* in the full significance of each of those three words. Furthermore the problem will not be solved in educational conventions or by wrangling over terminologies, curriculums or courses of study. It will be solved, if at all, by real experts in direct contact with groups of men, women, boys and girls.

THE ARGUMENT FOR UNIT CONTROL.

THE following summary of the argument for "unit control" of industrial education has been prepared by the Bureau of Education:

1. Separate control would divide and duplicate the administrative educational machinery.

2. Separate control would tend to stop the movement now under way to vitalize general, academic education by the introduction of new activities. Separate vocational education would leave general education to stagnate in remoteness from the realities of contemporary life.

3. Separate control would tend to check the movement to keep pupils in school for a longer term of years, since many would leave a purely academic school at the earliest possible moment in order to get their "working papers," trusting to the part-time or evening schools for further training.

4. Separate vocational schools work to the disadvantage of the pupils because of the narrow type of work such schools would be forced to offer.

5. Industrial workers should not be subjected to a training for efficiency separate from education for citizenship, intelligence, and character.

6. Extreme subdivision of labor, rapid changes in industrial methods, and mobility of the laboring population are reasons against trade training which is not an integral part of a general plan of education for industrial workers.

7. Separate schools for industrial workers would not harmonize with policy of discouraging undesirable class distinctions.

8. The experience of several States, but especially Massachusetts and Wisconsin, has not developed strong popular demand for separate vocational schools, independent of the regular public-school system. Massachusetts began by organizing a special commission on industrial education, for the purpose of administering the law and fostering the development of independent industrial schools. After experimenting with this plan for a time, the separate commission was abolished, and the responsibility for control and administration of all forms of educational effort was lodged with the State board of education, while local boards of education were given the power to organize vocational schools in connection with the regular public-school system.

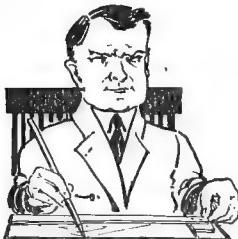
The Wisconsin plan, which has been cited as a successful example of separate administration, does not, strictly speaking, afford separate, independent control of vocational schools. The State superintendent of public instruction is, *ex officio*, a member of the State commission on industrial education. Wisconsin, it should be noted, has no State board of education. The city superintendent of public schools is, *ex officio*, a member of the local board of control for vocational schools, and it is provided by law that the other members of this board shall be designated by the local board of education. The State official in charge of the administration of the law governing vocational education is a deputy in the office of the State superintendent of public instruction.

9. The experience of agricultural college administration in the State seems to demonstrate the wisdom of developing such a college as a department of a university rather than as a separate institution. The presumption is that similar experience would be encountered in the secondary school period.

10. The establishment of separate vocational schools would result in the subtraction from the regular public school of all the most energetic pupils, except those who are bent along literary lines, to the detriment of both types of schools.

11. If it could be shown that adequate vocational training can be given only in separate schools, it would still be financially impossible to establish as many schools as there are vocations, except in densely populated large cities.

12. Separate control of vocational schools would obstruct, if not prevent, that readiness of transfer from one type of school to another, so desirable for pupils during the early period of differentiation of courses, that would be facilitated by the organization of all forms of education under the control of a single board of education.



A LITTLE ARGUMENT ON GREAT PRINCIPLES

"Definitions"



THE fault I find with you art teachers," said Try Square, "Is that you are altogether impractical. You talk about aesthetic appreciation, the love of the beautiful, the joy of expression and such stuff. I am more interested in having the boys acquire skill whereby they may be able to earn the necessities of life and to have good homes with surroundings which are beautiful and harmonious; that they may have some degree of comfort and have time in which to enjoy the good things of life—art galleries, park, libraries, and such things. Furniture of good design, good pictures, simple housefurnishings of pleasing design cost money, and unless a boy can hope to have some of these things why make him dissatisfied with the conditions in which he must exist?"

"I have thought a little on this subject of Vocational Education, Mr. Try Square, and have been reading what literature I can find on the subject. In fact, I am to give a lecture on Social Aspects of Vocational Education to the Parent-Teachers' Association next week," said Mr. Frills. "I have learned, however, that you manual training men are as bad as any of us. You do not give your boys vocational training, any more than the art teachers do. What you give is 'practical arts education.'"

"I don't quite understand what you mean by the term practical arts, Mr. Frills," said Try Square.

"Practical arts education," said Frills condescendingly, "is a form of non-vocational education which resembles vocational education but which results in vocational efficiency only by chance. To be vocational the controlling purpose of the training must be to fit for profitable employment."

"If that is the case," said Try Square warmly, "my work is and always has been vocational because I have always given it for the purpose of fitting a boy to make his living, and furthermore my work is altogether practical and my boys go out and get good positions in shops and factories and they make good, too."

"That is what I am saying," said Frills, "your work is practical arts education, 'which has an important and valuable place in general or liberal education,' but it is a mistake to call it vocational education."

"Then I suppose you would not call carpentry, or patternmaking or bricklaying a practical art," said Try Square. "And I suppose you would say that the work we are giving in our industrial school is not vocational. Say, what is the matter with you today, Frills?"

"My dear Try Square," said Mr. Frills, "you are sadly deficient in your knowledge of educational terminology. That school which you are conducting in the building down the street is a vocational industrial trade preparatory continuation school."

"Say Frills," said Try Square in amazement, "where did you hear all of that high brow stuff?"

"As I told you," said Mr. Frills, "I am to give a lecture on Vocational Education next week, so I have been studying the terminology of the subject in order that I may speak intelligently."

"Well," said Mr. Try Square, "I have made my living at a trade, and I have been training boys to make their living for several years, but I have not had time to read much of this stuff which has been printed, so I may be very ignorant. But it has always seemed to me that we

needed intelligent teaching of the subject much more than we need discussion."

"But I think you should read more on the subject so that you might talk intelligently"—

"There you go again," said Try Square testily, "what I want to do is to work and teach intelligently, and I am willing to let you hot air artists do the talking."

"I had hoped," said Mr. Frills, "that you would be able to give me a little help on the subject. There are a number of terms and definitions which I cannot understand. I thought you called those things which you make in the shops projects. I note that a project in vocational education is a definite unit of instruction which combines practical or manipulative achievement with a definite enhancement of power to apply related technical knowledge."

"Say, are you trying to say anything, or is that just language?" said Try Square.

"That is quoted from a book on terminology," said Frills. "I always supposed that evening schools were conducted in the evening, but I note from this authority that definition number 6, states that evening vocational schools are schools in which the hours of instruction lie outside of the customary working day. In another place it states that a pupil in a trade extension evening school receives his instruction during evening hours, and gives as an example a man engaged in the day in the practice of medicine, law or engineering, studying in an evening school subjects related to his profession. Now I want to know how a trade extension class teaches professions. I thought a trade extension school is an industrial school."

"That reminds me," said Try Square, "of the darkey's definition of a phenomenon. 'Rufus,' said Rastus, 'can you tell me what dis word phenomenon means?' Yessuh,' said Rufus, 'you see that cow over dar, dat cow aint no phenomenon. You see dat tree over dah, dat tree aint no phenomenon. You see dat cow go up dat tree tail first, das a phenomenon.'"

A TEACHER of Manual Training is wanted to take charge of the work at Punjab, North India. The following requirements are necessary: Thoro Christian principles; not over twenty-five years of age, preferably married. Terms—about \$1,200 plus rent, traveling expenses and extra allowance for six months' vacation in summer for each member of the family, and a yearly allowance of \$100.00 for each child under ten years; furlough at home of one and one-half years after seven and one-half years' service—salary and traveling expenses paid. Persons desiring consideration should communicate with Frank H. Ball, Supervisor of Industrial Education, Pittsburgh, Pa.

At the recent annual meeting of the *Society of Arts and Crafts*, held at Boston, there were 49 craftsmen advanced to the grade of master. The three bronze medals for the year were awarded to the following:

Frank Gardner Hale, jeweler, Boston; Mrs. Adelaide Alsop Robineau, potter, Syracuse, N. Y.; Miss Margaret Rogers, jeweler, Boston.

MISS EDITH CAMPBELL of Cincinnati has resigned the office of Secretary of the National Vocational Guidance Association. Miss Campbell states that the press of other matters makes it impossible for her to remain in the position. Her successor has not been announced.

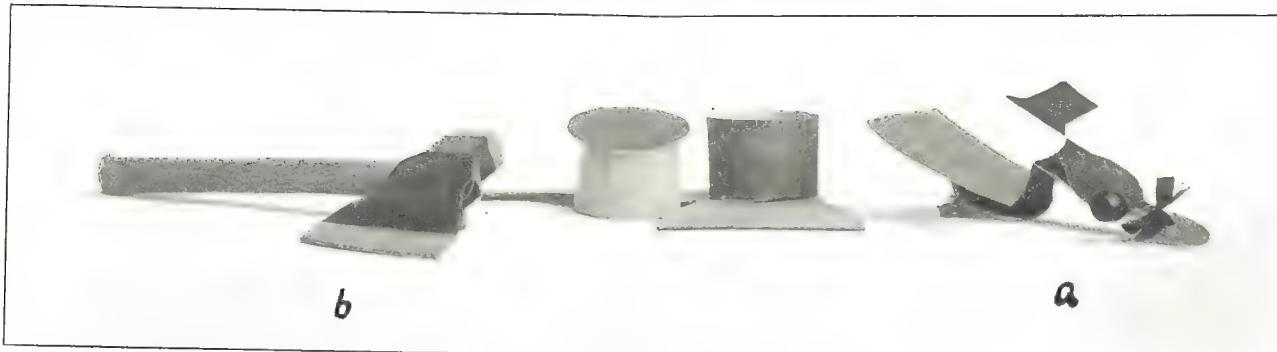


Fig. 2. The Middle Figure shows the box opened.

HOW IT WAS DONE!

The purpose of this Department is to present monthly a wide variety of shop projects which have been actually worked out in elementary, high, trade and continuation schools. Contributions are solicited and will be paid for—THE EDITORS.

THIRD AND FOURTH-GRADE PROBLEMS FOR SPECIAL DAYS.

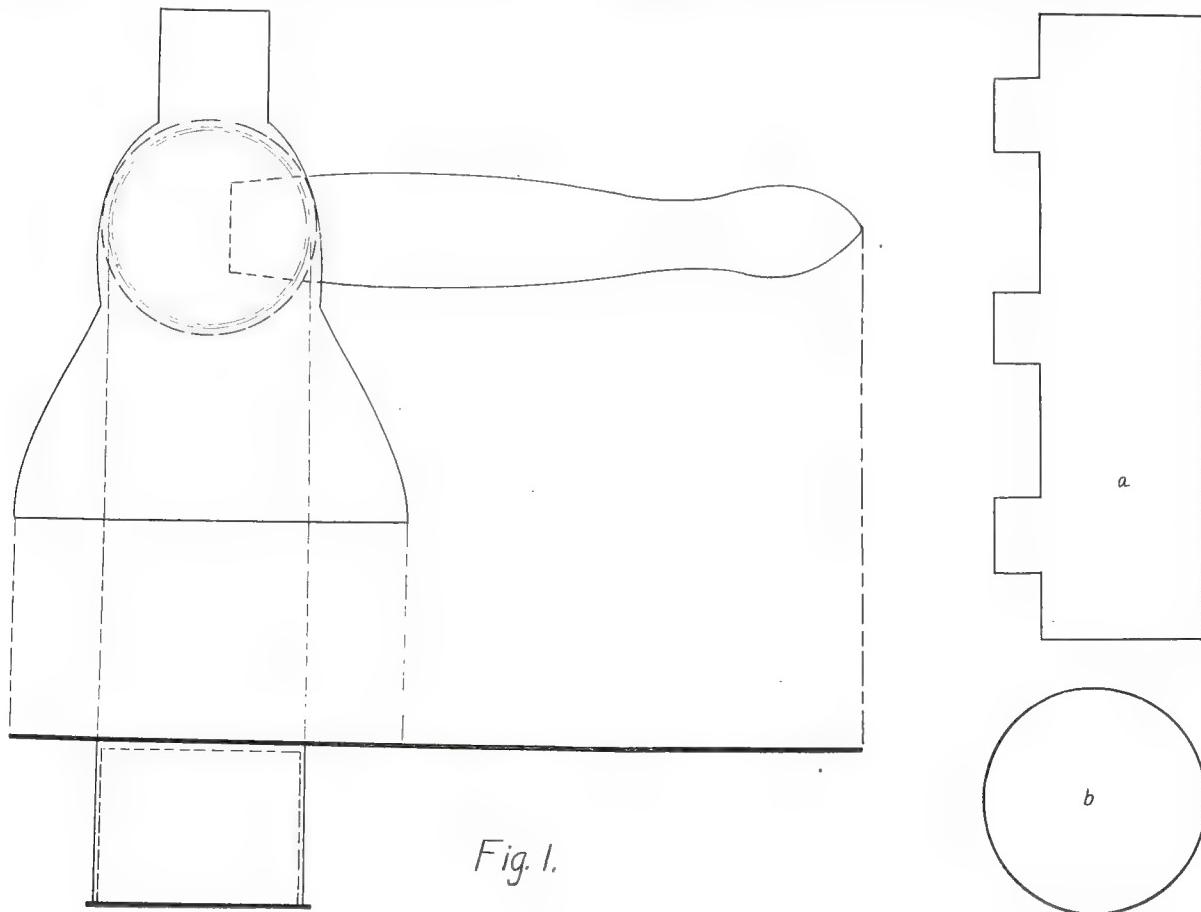
Regina Boodel, Harvard, Illinois.
Washington's Hatchet.

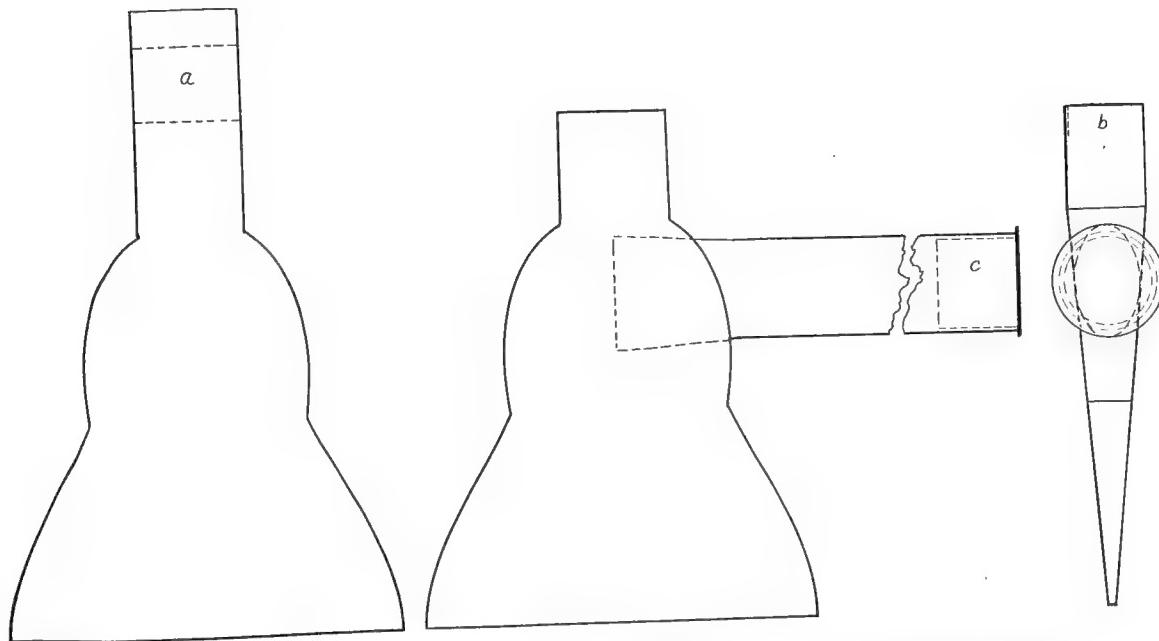
THE FIRST form of the hatchet shown in Fig. 1, is a candy box with the hatchet for part of the cover. This was made by a fourth-grade class for Washington's Birthday. The head and handle of the hatchet were cut free-hand from folded pieces of white paper, and pasted to a piece of cardboard. The handle was pasted on first so that the head would lap over the edge of it where the two met. The cardboard was then cut around the edge of the paper.

The box was made of two cylinders rolled from strips

of Manila board cut as shown at a, Fig. 1. One cylinder was pasted to the hatchet by means of the projections shown on the strips, and the other cylinder was pasted in the same manner to a circle of cardboard, b. Using water colors, the hatchet was painted red and blue, leaving stripes of the white paper intervening. The part of the box attached to the hatchet was painted red. Holes were punched in the handle and the stem of an artificial cherry was inserted as shown at a, Fig. 2.

The second form of hatchet Fig. 3 and at b, Fig. 2, was made of two cardboard hatchet heads, with a cylinder of cardboard inserted between for the handle. This handle constitutes the box which has a cover made similar to the bottom part of the box in the first problem c, Fig. 3. The head of hatchet was covered with red paper.





At "a" is shown an extension of one of the cardboard heads. This is turned and pasted to the other head as shown at "b." The lid of the candy box is shown at "c" in the end of the handle.

Easter Bunnies.

In this problem, shown in Fig. 4, the children draw a bunny. This bunny is cut out and used as a pattern around which to draw on colored Bristol board. Two bunnies are cut from the Bristol board and connected as shown in Fig. 5 by a candy box. This box is made of the Bristol board as indicated at b, Fig. 4. The ends of the box are pasted to the bunnies, as shown at a, Fig. 4.

Easter Chicks.

The pattern for the Easter Chicks, Fig. 6, is made and cut from heavy white paper as in the problem of the bunnies. The chicks are colored yellow by the use of

water colors or crayons. The box connecting the chicks is made from two cylinders of paper, in the same manner as was the box in the first hatchet problem.

St. Patrick's Hat.

This is another interesting variation of the box problem. The rim of the hat is a cardboard disc, to which a cylinder of Manila board is attached. The cylinder is made and attached the same as in the first hatchet problem. The rim and the cylinder together make the bottom part of the hat. The cover, which is the crown of the hat, is made of another cylinder slightly larger, with a small disc of cardboard for the top. See Figs. 7 and 8.

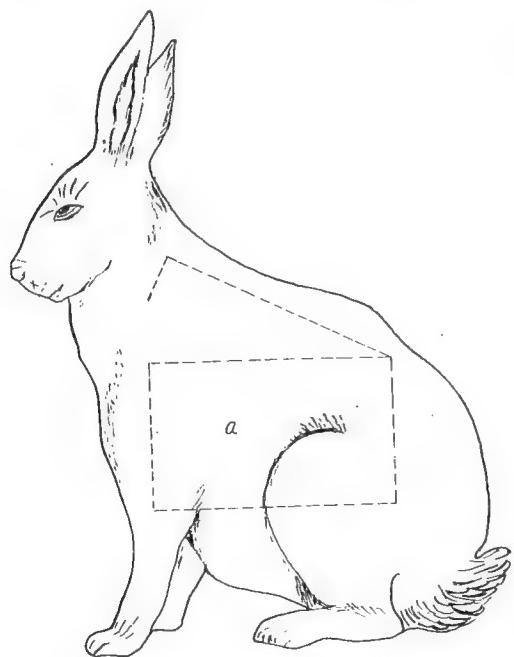
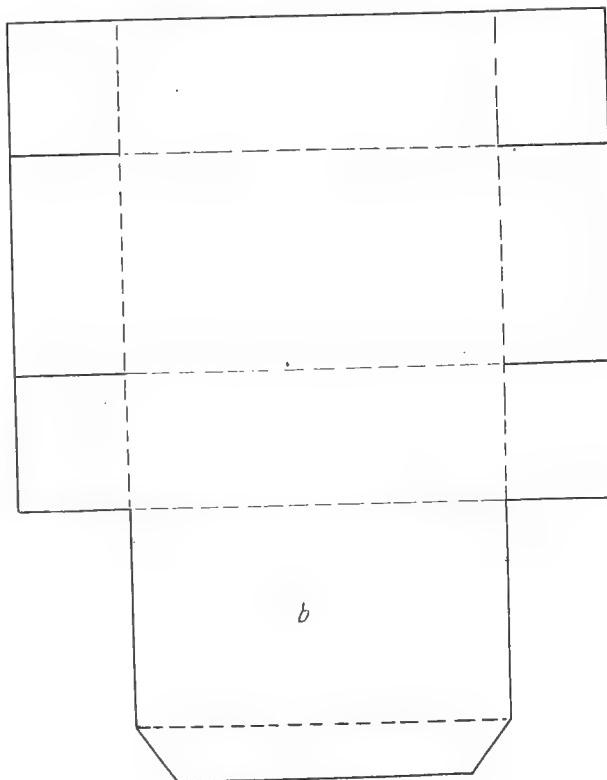


Fig. 4.



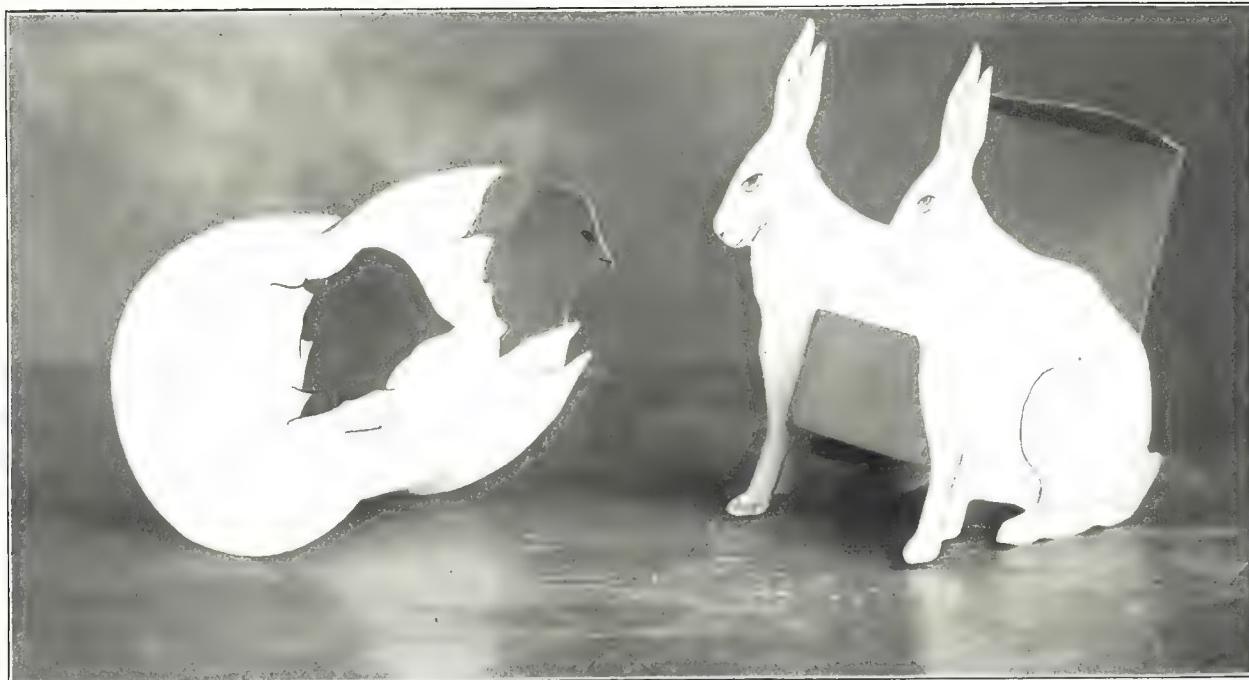


Fig. 5.

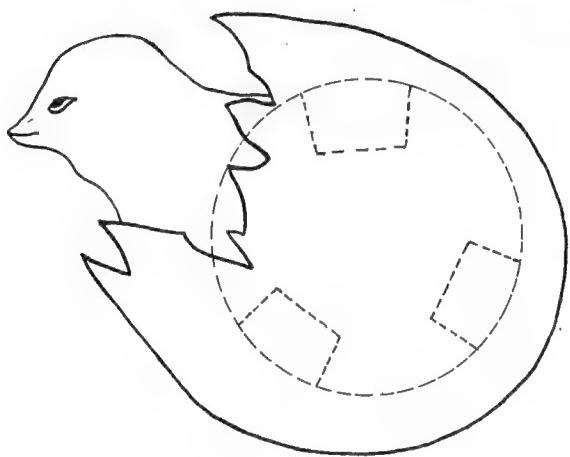


Fig. 6.

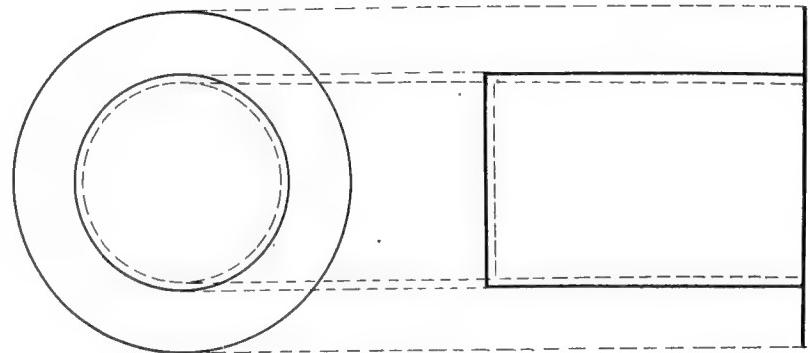


Fig. 7.

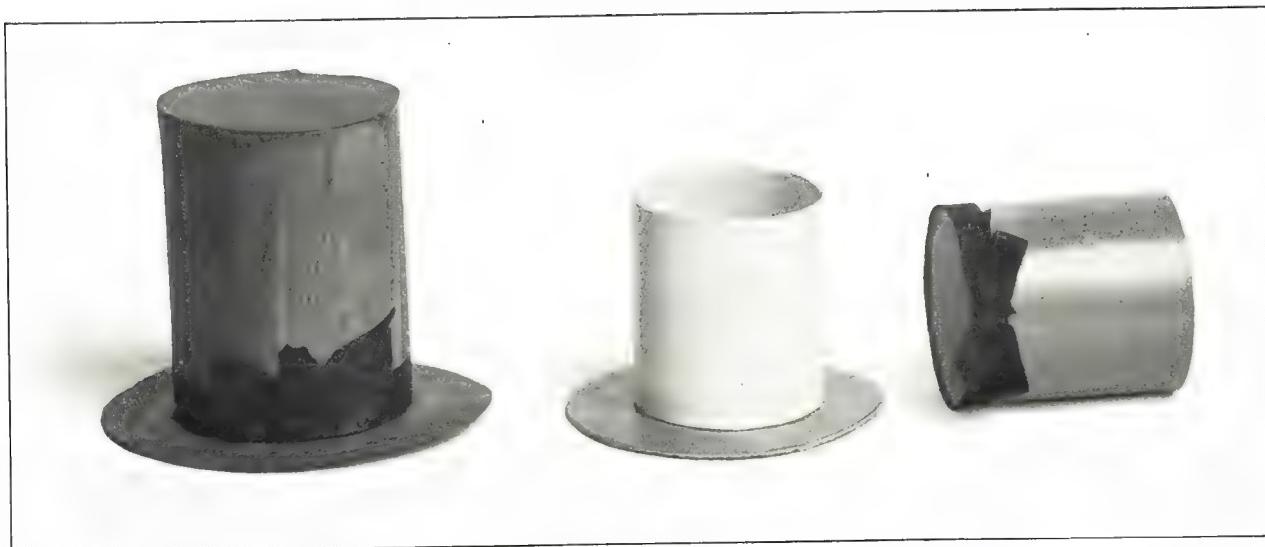


Fig. 8. The hat, closed and open.

VOCATIONAL EDUCATION AT THE DEPARTMENT OF SUPERINTENDENCE

Cincinnati, February 22-28

IF VOCATIONAL EDUCATION is to become an integral part of the public school system of the United States, the superintendents are to be the leaders in the movement. It is therefore extremely encouraging to have the Department of Superintendence of the N. E. A. at the Cincinnati meeting devote an entire day, Wednesday, February 24, to a discussion of this subject. Organizations whose purpose is to promote vocational education may meet and adjourn and meet again but when the school superintendents devote a day of their annual meeting to this subject, then results may be hoped for.

The papers and discussions of that day, if published, would bear a very strong resemblance to a day's proceedings of the National Society for the Promotion of Industrial Education. In discussing a "State Program for Industrial and Social Efficiency," Arthur D. Dean, Chief of the Division of Vocational Schools of New York emphasized that it is the business of the state not only to pass industrial betterment legislation with reference to minimum wage, factory inspection, workingmen's compensation, and a score of other activities which point the way to a new conception of the privileges which the state has a right to exercise, but it is also the business of the state to safeguard the interests of its children, to give them a fair start in life, to see that the teachers have at least a minimum wage, that the schools have inspection, and that the children working in industry have some compensation apart from money in an opportunity to continue their school work thru some state system of continuation schools.

The educational program which he proposed included such points as no child is to go to work until he has reached a minimum degree of maturity, not necessarily to be fixed entirely by age, nor until he has reached a certain educational standard, nor until he is physically fit to enter upon an occupational life. He emphasized the importance of considering the education of young people as being of public concern and that education was to be more than the training received in the day school, and that the state should assume the guardianship of its youth up to eighteen years of age whether in the school or the factory or the store. Furthermore, the purpose of the employment of children up to eighteen years of age is for the benefit of the child and is to be a part of his educative process and involves the consideration of the important question of how far occupations and employment can be made suitable to childhood and at the same time be made educative. And finally, that no child is to remain idle just because he has left school. After he has left employment, his employer is to notify the local school authorities and the child is to be returned to his proper grade in the regular school or to special places organized for such as he.

The attendance upon continuation schools of the state is to be made compulsory and instruction in them will continue the general education of the pupil or will give pre-vocational training which will assist the young worker in determining his vocational qualifications for a particular occupation or will give trade extension work to make him more proficient in the occupation in which he is now engaged.

Evolution of the Worker in Industry.

Speaking on the subject of "The Evolution of the Training of the Worker in Industry," Charles A. Prosser, Secretary of the National Society said in part:

Training for industry and the labor of children in industry are a matter of public concern which the state has the duty as well as the right to control, as far as the welfare of the youth and the public good may require.

The child is the ward of society over whom the state should assert such a guardianship both in his employment and education as may be necessary to make him a responsible citizen and an intelligent worker.

The primary purpose of the youth in industry should not be immediate profit to his employer or to society, but preparation for life and for labor and his career as a young worker should be controlled and supervised by the state so as to insure this end.

We need today a program of action in the protection and education of the employed child which will set up definite goals toward which we may move. These goals themselves should be variable which will advance with social, economic, and industrial changes and with the growth of a quickened public sentiment. I have, for my own satisfaction, constructed a suggestive program.

1. A rising standard of maturity for the child who leaves school to go to work. No child should be permitted to leave school to go to work until he has reached a certain minimum of maturity. This standard varies from twelve years in many of the southern states to as high as sixteen in a few northern states. It should today nowhere be less than fourteen.

2. A rising standard of physical fitness for the work undertaken by the employed child is necessary. No child under sixteen years of age should be permitted to go to work until he has reached a rising standard of physical fitness.

3. A rising standard of general education for the youth entering wage-earning. This varies among the states from no requirement to a sixth grade standing.

4. Enforcement of all regulations for the young wage earner. No child of any age, should, of course, be permitted to go to work in any occupation or under any condition forbidden to him by law.

5. Adaptation of the employed youth to his calling. The state should, thru its schools and all other necessary agencies, help the youth when he goes to work to find the employment and opportunities for advancement best suited to his interest and ability.

6. Administrative discretion in a state agency to protect unhealthy or hazardous work.

7. Local supervision to determine suitable employments for children. No child under sixteen years of age should be permitted to go to work save in an occupation whose conditions are approved by the school authorities as being on the whole such as to make such employment advisable.

8. A reasonable working day and no night work for immature workers. No child under sixteen years of age should be permitted to work more than eight hours per day, nor at night.

9. Continued education in approved employment. All children in industry under sixteen years of age should be required to give a part of their working time to civic and vocational training in the continuation school.

10. Compulsory education, keeping in the schools those children prohibited by any rise in the child labor law from wage-working. Child labor regulations prohibiting the employment of children should always be accompanied by compulsory education laws insuring the attendance of these children at school up to the same age.

11. Compulsory training for the idle and the unemployed youth. Any youth under sixteen years of age, who for any cause whatsoever, loses his employment as a wage earner, should be required to return to school for full time until he secures another position. This regulation will, of course, ultimately extend to those under

eighteen years of age, wherever they are also required, when employed, to attend the compulsory continuation school.

The self-improvement of industry in dealing with every phase of the employment and training of young workers. Beyond the law and the schools lies a wide field whose boundaries have no limit for the betterment which employers can make and where so many have already made valuable and lasting contributions the selection, initiation, protection, training and promotion of the employed youth.

Here again efforts of the employment manager and foreman must be supplemented by an enlightened public opinion, practical vocational guidance and placement, scientific management of the right kind and effective use of some such device as the juvenile labor exchange.

Agricultural Colleges Oppose National Aid.

John A. Lapp, Director of the Bureau of Legislative information of Indiana, who was also a member of the National Commission on Federal Aid to Vocational Education, started a commotion when he charged that the greatest obstacle in the way of obtaining national aid to vocational aid is the attitude of the Agricultural Colleges and Experiment Stations. He stated that after forty years of agricultural education such as it has been, we are confronted with relatively worse conditions than when scientific knowledge of agriculture first began to get serious attention. Average yield of farm crops has been either practically at a dead level or only slightly increasing; the soil is being exhausted at an alarming rate; the rural population is shifting to the city and the cost of living rises at a rate far in excess of increased capacity to pay. The facts are simply that the data of agricultural science has not been effectively put into possession of the men who till the soil. Millions of dollars have been spent on agricultural education and yet we are relatively about where we started from. A wider education is needed to make agriculture keep pace with the demands upon it. In the face of these conditions the agricultural colleges oppose the project of national aid for vocational education. In face of the flat failure of the rural school, they stand against the only possible method that can make agricultural education universal. They would make a boy leave schools in order to secure an education thru extension work, whereas the results so much needed can only be permanently achieved by educating the boy who wants to stay on the farm to be a farmer capable of applying the broadest knowledge to his soil and the girl who is happy in the farm home to be a homemaker in that home. Our rural schools have failed. They make the red-blooded rural youth live off of the dry husks of knowledge. Teachers have little sympathy with rural life and their knowledge of the country is limited. False standards are set up in the rural schools. Boys and girls are made to dislike educational work, and such influence as the school exercises is in favor of the trend away from the country. Heroic efforts must be made and instead of opposing, for selfish reasons, broad education which the countryside needs, the agricultural colleges should stand in the forefront. Not that they should do less of extension work for adult farmers, but that they should get a keener appreciation of the educational needs of rural youth.

Gary System Not Vocational.

Discussing the Gary schools Dr. David Sneden, Commissioner of Education in Massachusetts said: "In some quarters it is being said that the Gary plan has solved the problem of vocational education. If I understand Superintendent Wirt, Gary has not attacked the problem of vocational education, except as regards trade extension education in evening schools, because it is held that vocational education belongs in the industry itself, the public school co-operating where it can. The varied practical activities carried on in the schools and in connection with which many thousands of dollars' worth of work of a thoroughly productive character is done, especially in the building

trades, printing, furniture making, food preparation, stenography and bookkeeping, are not regarded as supplying the need of vocational education except for the small number of learners who are enabled to specialize as apprentices to the carpenters, plumbers, printers, machinists, painters, electricians, engineers, housekeepers, stenographers and bookkeepers employed as regular teachers of the practical activities in the schools themselves."

Vocational Education For Women.

Miss Edith Campbell of Cincinnati gave an address on "Vocational Education for Women" which was enthusiastically received. She said in part: "We have made little advance in the vocational training for women. We will have to have a change of attitude toward the girl. There are five elements which form the whole crux of what must be done. First we must decide whether she is a permanent factor in business; second, whether or not she is a civic factor; third, whether the vocational motive is a necessity in education for the building up of character and efficiency; fourth, the employment of married women; and fifth, can the girl be denied the inalienable right to work."

The following resolutions which deal specifically with Vocational Education were adopted by the Department:

Resolved, That we note with approval the increasing tendency to establish, beginning with the seventh grade, differentiated courses of study aimed more effectively to prepare the child for his probable future activities. We believe that as a result of these modifications a more satisfactory type of instruction will be developed and a genuine economy of time will result.

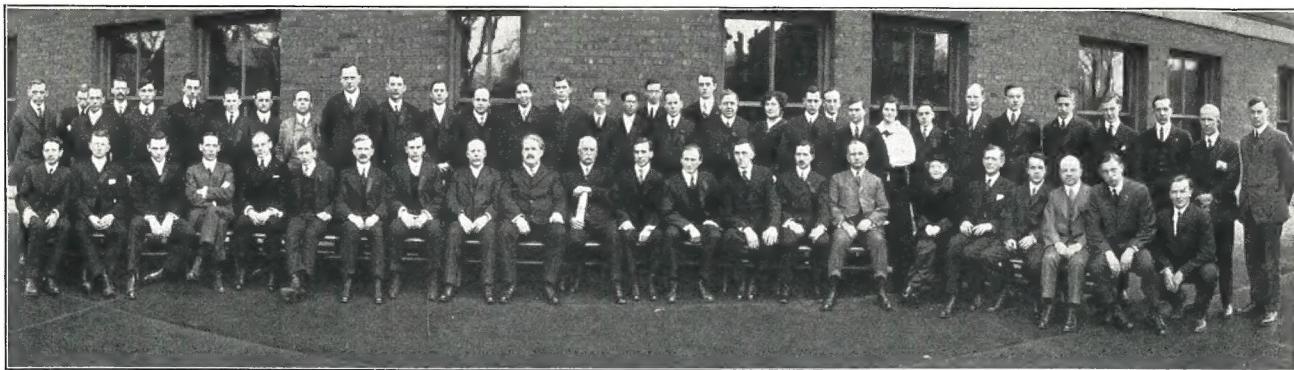
Resolved, That in the judgment of the Department it is of the greatest importance that support and encouragement be accorded to night schools and continuation schools organized for the training of adults. The dissemination of intelligence in a cosmopolitan population like that of our country demands not only that the children of the nation be educated but also that educational opportunities be offered to many of the older members of the community, especially where opportunities have been withheld in earlier years.

Resolved, That the legislation which is pending in the Congress of the United States for the protection of children of school age from undesirable employment, deserves most careful consideration. We recommend to the Bureau of Education and the Bureau of Child Welfare that they, as representatives of the educational profession, co-operate in promoting all national legislation looking towards this end.

A VOCATIONAL EDUCATIONAL AND OCCUPATIONAL GUIDANCE SOCIETY has been recently organized at San Francisco, Cal., having as its object the preparation of school children for their life's work in the occupations for which they are best fitted. Mr. G. E. Gallagher, president of the board of education, is president, and Mrs. Warren Cheney, of the University of California, is secretary.

The executive committee includes: Dr. R. A. Boone, C. J. DuJuor, J. S. McDowell, J. S. Roantree, Clarkson Dye, Irving Kahn, J. A. Lloyd, E. T. Pettit, J. J. McTiernan, Miss Felton, Mrs. E. Walding and George Randolph. A constitution has been adopted and it has been decided to hold meetings once each month.

WILLIAM T. BAWDEN, Specialist in Industrial Education, United States Bureau of Education, is making an extended tour thru the Far West for the purpose of studying schools and assisting in the development of work in which the Bureau is interested. At the Cincinnati convention of the Department of Superintendence, he presided at a Conference on the Problems of Vocational Education in the Small City, for superintendents. Following the convention his itinerary includes brief visits to Colorado, Idaho, Washington, Oregon, California, Texas, New Orleans, Chicago, and Wisconsin.



A Group of Members at the Illinois Manual Arts Association Meeting in Danville, February 13.

ILLINOIS MEETING.

THE ILLINOIS MANUAL ARTS ASSOCIATION held its twelfth annual meeting at Danville, February 12th and 13th.

Altho Danville is quite a distance down the state, the attendance was fully as large as in previous years. The president, S. J. Vaughn, and the secretary, C. E. Lang of Chicago, organized a party of twenty-six people from the northern part of the state. This party went and returned in a special coach.

The program thruout was exceptional both in strength and variety, and was commonly spoken of as the best program in the history of the organization.

There were four addresses that would have been a credit to any program. These were as follows: "Manual Training and its Relation to Vocational Education," Dr. L. D. Harvey, Pres. Stout Institute; "The Disappearance of the Male Teacher," Wm. J. Bogan, Prin. Lane Technical School; "Vocational Education in the Public Schools," J. H. Walker, Pres. Ill. Federation of Labor; "The Boys Behind the Bars," O. J. Milliken, Prin. John Worthy School, Chicago.

Another feature of the program which was unusual was the demonstration lesson taught by Mr. Henry Geilen of the Parker Practice School, Chicago Teachers College. He conducted a recitation with a class of eighth grade boys in the planning and drawing preparatory to a problem in Woodwork. The demonstration was discussed by Mr. Mohler of Pana and Mr. Peterson of Carbondale.

Other parts of the program were addresses by Mr. Phillips, New Trier High School, Kenilworth; Mr. Harold F. James, Normal School, Normal, Illinois; Mr. C. E. Howell, Decatur; Mr. Lake, University of Illinois; and Mr. Evans, Peoria.

The entertainment by Danville was delightful indeed. The banquet was served in the splendid Elk's club. Supt. Randle, Prin. Smalley, and especially Mr. Tuggle, and the Art and Domestic Science instructors were tireless and effective in their efforts to show the members of the Association a good time.

The meeting goes next year to Joliet. The following officers were chosen: President, A. C. Bauersfeld, Lane Technical School; Vice-President, C. E. Howell, Decatur; Secretary-Treasurer, L. A. Tuggle, Danville.

VOCATIONAL SCHOOL CONTROL IN GERMANY

A REPLY TO DR. ROMAN

Edwin G. Cooley, Chicago, Ill.

In the March number of the INDUSTRIAL-ARTS MAGAZINE there appears an article by Dr. Frederick W. Roman, of Syracuse University on "Control of the German Vocational Schools," in which he challenges my statement that vocational schools in Germany are almost universally under what is here sometimes called the "dual" system (control by an independent board), as opposed to the "unit" system (control by the same board that has charge of the general schools). The editor has invited me to reply to this challenge, and I shall do so, but not at any great length, for two reasons: In the first place, I threshed this question out with the same writer two years ago, in another educational journal, and do not find anything of importance that is new in the present article; and, in the second place, we are engaged just now in Illinois upon an attempt to get an adequate law for vocational education passed by the legislature whose biennial session is now in progress, and it is difficult for me to spare time for a re-argument on how the German schools are conducted. Dr. Roman's previous article, by the way, appeared two years ago under quite similar circumstances.

A great deal of Dr. Roman's present article is devoted to showing that authority (in all lines) in Germany is highly centralized, and that there is less of local control than in the United States. These statements are, of course, true, but I confess I do not see the bearing on this controversy. When I say, in effect, "vocational schools in Germany are not controlled by the local school board, but by a local board of practical men," Dr. Roman replies, in effect, "No such thing; local boards have very little to do

with the subject; the management of these schools is in the hands of a state board or department of some kind." In many instances, yes; but that state department is usually *not* the ministry of education, but the ministry of commerce and industry, or the ministry of the interior, or the ministry of agriculture. Dr. Roman is simply quibbling on this distribution of authority between state and local boards; there is no controversy on this point in the United States. Two vocational education bills are to be presented to the Illinois legislature at its present session, the bill put out by Dr. Roman's friends and the Commercial Club's bill, but, while differing as to whether the *local* control shall be according to the "dual" or the "unit" system, *both* bills provide for a "State Board of Vocational Education" as the governing body so far as the state is concerned. In other words, when anyone here inquires as to the experience of Germany in this matter of control, what he wants to know is this: Are the vocational schools controlled by the same body that controls the general schools? Is the *local* governing body for vocational schools (whatever its scope with reference to a state department) the same as the *local* governing body for the general schools, or different? Is the *state* department or ministry that has authority over vocational schools (whatever its scope with reference to the *local* boards) the same as the *state* department or ministry that has authority over general schools, or different? The answer, "Different," is given by the Swedish Commission of 1907-12; by the Wisconsin Commission of 1908-11; by the investigators for the special committee on industrial education of the

American Federation of Labor, in 1909; by Holmes Beckwith, in a report published by the United States Bureau of Education; by Dr. Kerschensteiner; and (in general) by Dr. Roman himself. This is a fact which cannot be befogged by any long discussion over the relative weight of the local and state boards of Germany.

To touch upon a few points raised by Dr. Roman: While he admits that the vocational schools of America are under the control of the ministry of commerce and industry, not the ministry for schools and churches, he again insists (as he did two years ago) that this separation arose from quarrels between Bismarck and the clergy. When I was in Prussia last year I inquired repeatedly of prominent men connected with the schools concerning this supposed reason for the separation, and I found no one who had ever heard of it. The transfer of the vocational schools from academic to practical control was made, according to the report of the national industrial commission for 1909, because of complaints by practical men, representatives of the guilds, and so forth. But let me quote Dr. Roman's own account of the matter, in his "Die deutschen gewerblichen und kaufmännischen Fortbildungss- und Fachschulen, und die industriellen und kommerziellen Schulen in den Vereinigten Staaten von Nordamerika. Ein Vergleich." ("The German industrial and commercial continuation and technical schools, and the industrial and commercial schools in the United States of America. A comparison"), published in Leipzig, 1910. The following (page 48) is under the heading "Preussen" (Prussia):

"Der wichtigste Schritt zu einer günstigen Fortentwicklung der gewerblichen und kaufmännischen Fortbildungsschulen war 1884 die Ueberweisung der gewerblichen und kunstgewerblichen Fachschulen usw. an den Minister für Handel und Gewerbe.

"Die grossen Vorteile dieser Ueberweisung haben sich schon an vielen Punkten gezeigt."

"The most important step to a favorable development of the industrial and commercial schools was the transfer in 1884 of the industrial and art trades schools, etc., to the Minister for Commerce and Industry.

"The great advantages of this transfer have already shown themselves at many points."

It will be noticed that Dr. Roman, in his own book, published in Germany, and with his experience fresh in mind, does not so much as mention the religious controversy which he now insists upon as all important.

Dr. Roman says in his present magazine article that, "Up to the present time, Prussia has not been able to get legislation making industrial education compulsory, except for the provinces of West Prussia and Posen. * * * As it is now, only the districts or communes can make attendance compulsory." Yet in Prussia, in 1912, there were 362,228 pupils in vocational schools, under compulsory schemes, only 22,729 under non-compulsory schemes, and 11,053 in guild schools. From this we might fairly infer (what everybody knows to be a fact) that even in Germany there are a good many traces of local control; the great modern democratic movement has not wholly missed the German people.

I would call attention here to the extraordinary (and, so far as I know, absolutely unfounded) statement of Dr. Roman that "the friends of the 'dual-control' system cite Prussia as their best example."

As for Saxony, over five hundred industrial continuation schools and technical schools of various sorts are under the ministry of the interior. There are, however, a number of other continuation schools under the ministry of education, the leaders of which have set up the cry of dualism and are trying to bring about a change. There is not the slightest evidence, however, that they are going to succeed.

The situation in Württemberg is well described by Dr. Albert A. Snowden in a valuable thesis published seven or eight years ago. In this work (page 47) he says: "We

must remember that the vocational school laws of Württemberg have ever been chiefly instigated by business men, and that the recent advanced legislation in this direction is mainly the work of employers, guided by the helpful counsel of President von Mosthof of the Central Bureau for Industry and Commerce, a department of the Interior Ministry in this little Kingdom which is in more effective relations with the producing interests of the country than any other agency I know of the world over. The Educational Ministry, it might well be said, merely furnished the pedagogical trimmings of the Bill." On page 21 he says, "Under separate ministries in the majority of the larger states of Europe, the lower industrial schools are nominally under the educational ministries of Württemberg and Austria, but are quite as much under the control of the industrial departments (Interior Ministry) thru their influence in appointing members of the central vocational school board." (Since this was written by Dr. Snowden the industrial schools of Austria have been transferred and placed under the Ministry of Public Works.) And on page 38, "Each industrial or commercial school is under the direct local supervision, respectively, of 'an industrial school board' or 'a commercial school board.' The mayor and the member of the school concerned are ex-officio members of this body."

Dr. Kerschensteiner's word will probably be decisive on the situation in Munich. In February, 1914, I gave him a copy of the Commercial Club's vocational education bill as presented to the Illinois legislature in 1913. After two weeks' consideration he wrote me a letter, under date of February 25, 1914, from which I may give the following quotation:

"I thank you heartily for sending me your bill for the establishment of continuation schools in Illinois. I have read the bill with great interest, and I am convinced that the things you are striving for, should they become law, will have splendid results. Above all it is important that schools of this kind should have their entirely separate administrative boards. Only when this is the case can one be quite sure that the business of the school will be carried on in a quite impartial manner. With us in Munich, each type of school has its own administrative board, so that we in Munich have five administrative school boards, entirely separate from one another: * * *"

I may add that our 1913 bill provided for the appointment of the members of the local board of vocational education in each city by the mayor, while the present bill provides for their appointment by the local school board.

Dr. Roman concludes with a eulogy of the public schools of the United States. I do not think it necessary for me to say that I agree with him in this. My relation with the public schools has been much longer and more intimate, I believe, than Dr. Roman's, and I do not yield to any man in sincere concern for their welfare.

To sum up, the plan we are proposing for Illinois is the plan that has been in successful operation in Wisconsin for the past three years. I notice that some advocates of the "unit" system are now beginning to explain the success of the Wisconsin system by saying that it is not "dual" at all, that it is rather an "associate" system, since the local school board appoints the members of the local vocational school board, and the local superintendent of schools is not an *employe*, but a *member*, of the local vocational school board. Exactly the same plan is proposed for Illinois, but here the same people who seem to acquiesce in the Wisconsin plan as "associate," not "dual," continue to condemn the plan for Illinois, and call it "dual." As for Germany, while there are instances of less complete, as well as of more complete, separation of vocational from general schools, there is nowhere any such unified system as is proposed here by the advocates of the "unit" plan, and no one attempts to say so,—the evidence to the contrary is too overwhelming; while a plan that goes much farther than our "dual" plan is the rule. For proof, I need not go outside of Dr. Roman's article itself.

NOW, ARE THERE ANY QUESTIONS?

Readers are urged to ask questions concerning the Industrial Arts. The editors will reply to those questions which they feel that they can answer, and to other questions, they will obtain replies from persons who can answer them authoritatively.

Liability for Injuries.

Q:—Is a school board legally liable for damages in Wisconsin, and in the state of Illinois, for injury to students in manual training classes and would a private school such as Bradley Polytechnic Institute come under the same law as a public school?

Is it true that the *teacher* in the shop in which an accident has happened is sometimes held for damages instead of the *institution*? I refer to the law in the state of Illinois.

Any information you could give me on Illinois law, on this subject, as to who is liable for accidents would be received very gratefully. I am a teacher in a shop where there are sure to be accidents at some time or other.—*H. L. H.*

A:—A city, town, school board or school district is not liable for damages or injury to students or pupils in its schools, whether manual training, trade school or the ordinary grammar school, and whether caused by the negligence of its servants and employees or not.

This is the general rule in most cities and is followed in Wisconsin and Illinois.

*Bernstein vs. Milwaukee (Wis.), 149 N. W. 382.
Folk vs. Milwaukee, 108 Wis. 359.*

Kinnare vs. Chicago, 171 Ill. 332; 28 Cyc. 577.

It is based on the theory that in conducting a school the city, town or school board is engaged in a public or governmental function which is for the general welfare of the whole community, as distinguished from an act in its corporate capacity from which it could derive special benefit or advantage.

However, if the injury is due to the negligence of an officer or agent of the city, town or school board, such officer or agent is personally liable altho the school is not. His public office does not relieve him from liability for any wrong committed by him. (28 Cyc. 502), (*Hollenbeck vs. Winnebago Co.*, 95 Ill. 148).

In the case of private or non-charitable schools the rule of liability is the same as that of any private corporation, or individual. Hence such school is liable for the injury caused by the negligence of its servants in the scope of their employment. (38 Cyc. 476.)

And the Bradley Polytechnic Institute would be liable for an injury to any of its pupils proximately caused by its negligence or the negligence of its servants or employees where there was no negligence on the part of such pupil contributing to the injury.

The servant or employee of such private school is personally liable for any injury caused by his negligence, whether it be an act of omission or commission, and whether within the scope of his authority or not, where the party injured was not negligent himself. (*Baird vs. Shipman*, 132 Ill. 16; 1 L. R. A. 128.)

The servant or employee and the school board are not jointly liable in such cases. If the school is sued the servant or employee cannot be made a joint defendant therein, but either may be sued separately. (26 Cyc. 1545), (*McNemar vs. Cohn*, 115 Ill. App. 31).—*C. F. M.*

Cane.

Louisville, Ky. Q:—Where may I buy cane for chair seating and similar work? How much does it cost?

A:—The American Rattan & Reed Mfg. Co., Brooklyn, N. Y., can furnish cane for such purposes. This firm also has a Chicago house. Any upholstering establishments in the larger cities should be able to supply your needs.

Cane is sold by the hank, which contains 1,000 lineal feet, and ranges in price from 55 cents to \$1.00 per hank.

The variation in price depends upon the width of the strands, the narrower strands costing more.

Glue.

Indiana. Q:—How long should glue be soaked before cooking? How long should it be cooked?

A:—It is a very satisfactory method to break up the glue into fine bits and pour cold water over it in the glue pot, until the water stands somewhat above the top of the glue. Let the glue remain over night in this condition. It should then be cooked until it is thoroughly heated and until it reaches the proper consistency for use. If the glue is cooked before soaking, it becomes "stringy" and difficult to use.

Plumbing Teachers.

Michigan. Q:—Can you guide me to a list of training schools where plumbing is taught, and where I may secure a teacher of plumbing?—*C. M.*

A:—University of Wisconsin, Industrial Teachers' Training Classes, Milwaukee, Wis.; Stout Institute, Menomonie, Wis.; Pratt Institute, Brooklyn, N. Y.; Carnegie Technical Schools, Pittsburgh, Pa.

Hard Putty.

Illinois. Q:—Where can I purchase or how can I make a putty that will dry hard and sandpaper smooth?—*J. K.*

A:—A good hard putty can be made from three parts dry white lead and one part gilder's whiting. They should be thoroughly mixed, adding equal parts of rubbing varnish and coach Japan. The whole is then mixed to a stiff dough, and is ready for use. This putty will dry hard in 24 hours, and can be sanded smooth. It may be colored by mixing dry pigment of the desired color with the putty. To prevent the putty from getting hard before use, it should be kept in water. This excludes the air and keeps the putty soft.—*C. D. F.*

Miscellaneous.

Breckenridge, Minn. Q:—1. What is the address of the Dewey Blueprint Company? 2. What space should be left between Manual Training benches?—*A. W. B.*

A:—1. Dallas, Tex. 2. No definite rule can be given for the distance which should separate Manual Training benches in an ordinary Manual Training room. Much depends upon the size of the room, the size of the benches, windows, stock cabinets, etc. A good plan is to allow a minimum of thirty inches between benches, from side to side, and thirty-six inches, from front to back. A space as large as possible should be allowed around the demonstration benches and in front of the stock case.

Schoolroom Decorations.

Inverness, N. S., Can. Q. Please mail me the address of firms that will sell me pictures for the decoration of the walls of my schoolroom.—*C. B. F.*

A. The following firms can supply your wants:

Photographs and photogravures of European Masterpieces: The Berlin Photographic Co., New York City; Maison Ad. Braun et Cie, New York City, Franz Haufstaengl, 543 Fifth Ave., New York City; Hoover Art Co., Los Angeles, Cal.

Schoolroom pictures: Atkinson, Mentzer & Company, Chicago, Ill.; The Prang Company, New York City; A. W. Elson & Company, Boston; National Art Supply Co., Chicago, Ill.

Photographs and photogravures of American subjects: Curtis & Cameron, Boston, Mass.; Hoover Art Co.

Picture collections (sold at a low price for individual study) Cosmos Pictures Company, 119 West 25th St., New York City; Geo. P. Brown & Co., Beverly, Mass.; The Perry Pictures Co., 2 Pleasant St., Malden, Mass.